Cost of Alternative Care Study

Final Report - July 1980

Bureau of Health Planning and Resource Development

Division of Hospital and Medical Facilities

Montana Department of Health and Environmental Sciences

Submitted to:

Health Planning and Resources Development Bureau
Montana Department of Health and Environmental Sciences
Helena, Montana 59601

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FINAL REPORT

COST OF ALTERNATIVE CARE STUDY

Submitted by:

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ACKNOWLEDGMENTS

This study deals with the feasibility of establishing alternative long-term care programs to nursing home care for the elderly in the state of Montana. The cooperation and support of several Montanans greatly enhanced the quality of the study and contributed to its successful completion. Several individuals in the Montana State Government provided useful comments and responded to technical questions when they arose. Particular acknowledgment goes to Warren Brass, the Project Officer, in the Department of Health and Environmental Sciences and Gary Blewett, the representative of the Department of Social and Rehabilitation Services on the Task Force. An important component of this study has been the Project Task Force. This group, representing several state agencies and the Montana Health Systems Agency, has critically reviewed each of the interim reports and has provided meaningful insights to assist in the interpretation of study results.

The survey administered to 1500 elderly Montanans was an important component of this study. Our thanks go to Dr. H. Grauer who gave us permission to utilize the Geriatric Functional Rating Scale for this study. The cooperation of the Montana Hospital Association, the Montana Nursing Home Association, and the Montana Association of Homes for the Aging was helpful in administering the survey in nursing homes and boarding homes. The Department of Housing and Urban Development Region VIII Office provided a list of Montana HUD-sponsored housing projects for the elderly.

Several JRB staff and consultants made significant contributions to this study. The project was managed by Dr. Steven S. Lazarus, Manager of the Denver JRB Office. Mary Lou Craig, Jo Anne Gardner, and Ralph Lieberthal identified and collected the literature relevant to this study. Peter Edgerton and Kenneth Deshaies successfuly completed 1500 surveys, traveling throughout Montana during the winter months of 1979-1980. Their persistence in finding the survey respondents and their success in completing the 1500 surveys provided an important data base for this study. Peter Edgerton also prepared the data for SPSS analysis and executed the SPSS programs. Brian Balicki obtained project data from ACCESS in Rochester, New York and met with the Federal Project Officers for the Triage and Georgia Demonstration Projects.

A special acknowledgment goes to the contribution made by the administrative and secretarial staff working on this project. Margaret Stenson successfully administered all of the complex travel arrangements required to conduct this study and has overseen the report preparation activities. Georgia Alles and Judith Maurer provided the secretarial support at various stages of this project.

Most importantly, we wish to thank the 1500 elderly Montanans who responded to the survey, the researchers and demonstration project administrators who shared their findings with us, and the nursing home and boarding home administrators who allowed us to conduct the survey in their facilities. Finally, we want to thank the Montana State Government officials who had the foresight to request this study, the results of which have already been used by the Department of Social and Rehabilitation Services.

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1. EXECUTIVE SUMMARY

The Montana Department of Health and Environmental Sciences contracted with JRB Associates, Inc. in June, 1979 to conduct a study on the Alternatives to Nursing Home Care for the Elderly. Major components of the study included a literature review, a survey of 1500 elderly throughout Montana, and cost and volume estimates for alternative services.

Based on the literature review and information available on several alternative long-term care demonstration projects, the alternatives to nursing home care which have the most promise for being cost effective and providing quality care occur within three models. One model is the Community Care Organization (CCO) which has been demonstrated since 1975 in several locations under Federal Government sponsorship. This approach consists of establishing a locally based organization to provide screening, assessment, and (usually) case management services to elderly and disabled who cannot function independently. The organization also has funding sources to fill gaps for services not normally covered under Medicaid or Medicare.

The second model is the Long-Term Care Channeling Program initiated by the Federal Government in Summer, 1980. This model is highly similar to the community-based model; however, there is a requirement for significant state level multi-agency participation in the project and a more uniform structure across all projects is mandated by the Federal program. The third model is the Congregate Housing Services Program sponsored by the Department of Housing and Urban Development (HUD). This program, which began in 1979, provides a limited number of nonmedical support services to elderly and handicapped HUD-housing residents. The scope of services funded with this model is less than the scope for the previous models; however, housing is one of the services included by virtue of the eligibility requirement for participation. The residential concentration in one location of several alternative program clients creates an environment for efficient and perhaps more frequent delivery of the required services.

The literature and information gained from a few site visits to operational demonstration projects yielded significant insights regarding

the administration and organization of alternative long-term care programs. Key components appear to be: a screening function to identify those who are at high risk for institutionalization, a clear definition of target population, an assessment process to develop a treatment plan, case management to arrange for and coordinate multiple services and respond to changes in the client's status, gate keeping to review all candidates for nursing home admission, and a single funding source which can be utilized to remove financial barriers to needed services which cannot be reimbursed through traditional funding mechanisms.

A significant task for this study was the design and conduct of a random survey of 1500 elderly Montanans throughout the state. Three-hundred surveys were completed in each of the five State Health Planning Regions, with 100 elderly respondents in each of the following categories: Medicaid in nursing homes, Medicaid users not in nursing homes, and non-Medicaid residing in HUD housing. The latter group was chosen to represent the non-Medicaid elderly. The Geriatric Functional Rating Scale (GFRS) was selected as a major component of the survey instrument, because of the short time required for administration and its previous successful application as a predictor of institutionalization.

The following are the significant findings based on the survey data:

- The Geriatric Functional Rating Scale is a useful instrument to document the level of functional ability of the elderly population and for projecting institutionalization and alternative program utilization.

- Scores on the Geriatric Functional Rating Scale are statistically correlated with age; the older population has less functional independence.

- On a statewide basis, nursing home placements appear to be for the most part appropriate. Few nursing home residents scored functionally independent on the survey.

- Functional abilities for the elderly population appear to be at a fairly stable level until at least age 75, indicating that the population at risk for institutionalization is generally aged 75 or over and the risk increases with age.

- Regional results, both urban and rural, of the survey can be utilized in the process of estimating the number of candidates for institutionalization or alternatives.

Cost estimates of services provided under alternative programs were developed as part of this study, based upon available Montana information and literature. Because of definitional differences, difficulties in converting costs from other geographic areas and for other times to the 1980 Montana environment, and the limitations on data availability for Montana, best cost estimates based on available information were developed. However, these estimates are weakly supported, but they are relevant to other findings of the study. Unfortunately many of the evaluations planned for the operational demonstration for alternative projects are not complete or have serious flaws in the cost analysis components.

Based upon the literature, volume estimates were developed for each of the more frequently utilized services in alternative programs. By developing a methodology to utilize the results of the Geriatric Functional Rating Scale survey, volume estimates were produced for the number of candidates for alternative care programs and nursing home bed requirements. These latter estimates were made for each of the five Planning Regions, including separate estimates for the urban and rural areas within each Region. Many assumptions were required to enduce these estimates, which could be improved by the availability of better data.

In summary, the project covered a broad range of topics relating to alternatives to institutionalization for the elderly. Cooperation from State Government officials, nursing home administrators, and boarding home administrators contributed greatly to the success of the project. In addition to the many scientific skills required to successfully conduct this study, administrative planning was also an important component to the successful completion of the survey activity on time. The findings of this study have already been utilized by the Montana Department of Social Rehabilitation Services as part of the background information included in the Montana proposal to the Federal Government to be selected as one of the sites for the Channeling Demonstration Program.

2. INTRODUCTION

2.1. PROJECT DESCRIPTION

The Department of Health and Environmental Sciences, Department of Institutions, and Department of Social and Rehabilitation Services have been working on a Task Force to recommend legislative and budget considerations for the 1982-1983 biennium regarding the appropriate investment of state funds towards the necessary support and care of the elderly and mentally handicapped. Some of the services that are considered reasonable alternatives to nursing home care are: homemaker services, adult day care, home health care, meals-on-wheels, personalized nursing care, and sheltered group homes (personal care homes). It is recognized tnat other innovated mixes of services have been employed to encourage greater independent living by vulnerable people. What is not known is (1) how many people in Montana need assistance to support a relevant degree of independence short of institutionalized care (2) how the people in need distribute among the kinds of care that might be available if appropriate funding were available, and (3) how much these kinds of care cost.

In June, 1979, the Montana Department of Health and Environmental Sciences contracted with JRB Associates, Inc. to conduct a study on the Cost of Alternatives to Nursing Home Care for the Elderly. This is the Final Report prepared as part of that study. The significant findings presented in the four interim reports prepared during this study are included in this Final Report. Meetings have been held with the Task Force to review the findings of each interim report.

2.2. SIGNIFICANT FINDINGS

2.2.1. Identification of Alternatives for the Elderly

The alternatives investigated in this study are based on information from the literature and operational alternatives to nursing home long-term care projects. Based upon the review of the literature and operational programs, it was decided that this study could not appropriately encompass the mentally

handicapped, although some insights regarding developmentally disabled in institutions might be achieved.

Six types of alternative programs were reviewed:

- Individual, uncoordinated services such as home health care, physical therapy, etc.,
- Long term care channeling, which is a highly structured, coordinated, comprehensive alternative program to nursing home care proposed for demonstration by the Federal Government,
- Community based long-term care, which is a highly structured, coordinated, comprehensive program shich has been demonstrated under federal and foundation funding,
- Swing rural hospital beds converted temporarily to nursing home beds,
- Coordinated, nonmedical services provided to elderly and handicapped HUD housing residents, and
- Adult day care.

Aspects of several projects that fall into these categories are discussed in Chapter 5. Adult day care appears to be very expensive and require a large number of participants. The literature is very limited on this alternative. The hospital swing bed programs are basically oriented to providing temporary nursing home bed facilities in a local, rural community until a local nursing home bed is available; and thus avoid admission to a nursing home in a distant urban community. While there are certain meritorious qualities to this program, it is not an alternative to nursing home care. The fragmentation of service and the lack of coordination associated with providing individual services at home to elderly who require multiple services that are coordinated (as is usually the case for a candidate for nursing home admission), has led to the development of demonstration projects to coordinate these services. The three approaches described below appear to be the best alternatives for long-term care and all have been demonstrated or have the potential for being demonstrated in rural areas.

Beginning in the mid-1970's, the Federal Government funded a number of Community Care Organization (CCO) Demonstration Projects as alternative long-term care programs. Some of these programs worked better than others. A description of some of the demonstration projects is included in Chapter 5 of

this report. Unfortunately, there is no uniform national evaluation of these demonstration projects and therefore an independent assessment of their performance is not readily available. Several of the projects had individual evaluations. The Federal Government is funding a national evaluation for these community based projects in the Fall, 1980. At least one CCO project, in Wisconsin, included a rural demonstration site.

In Spring, 1980, the Federal Government issued a Request for Proposals for states to apply for demonstration contracts to Conduct Long-Term Care Channeling Demonstration Projects. These projects provide a highly structured, local and state organized, coordinated alternative to nursing care program for the elderly and physically disabled. Coordination at the state level is required between the Agency on Aging, the Medicaid program, and Title XX. The Montana Department of Social and Rehabilitation Services applied for a demonstration contract under this program on June 13, 1980. Portions of the background material for that application were taken from interim reports prepared as part of this study. In particular, the results of the survey in Chapter 3 were utilized in the application.

The third program is the Congregate Housing Services Program of demonstration projects which began in 1979 under the sponsorship of the Department of Housing and Urban Development. This demonstration program, which is to be evaluated nationally, provides for coordinated housing, transportation, and a limited number of nonmedical support services for HUD residents who are elderly or handicapped. Preliminary evaluation reports on this demonstration program will be available in early 1981. Northern Cheyenne Housing Authority in Lame Deer, Montana is one of the 38 grantees to receive demonstration funds in 1979. Funds for new demonstrations in 1980 will be awarded in Summer, 1980.

2.2.2. Identification of the Unit Costs of Alternatives and Volume Requirements

Unit cost and volume estimates for alternatives are presented in Chapter 4. In most cases, data for basing cost estimates is limited.

2.2.3. Estimates of the Number of Montanans That Could Use Alternatives

This study includes estimates of the number of elderly Montanans, both for the state and by region, who could utilize alternatives to nursing

home care. These estimates are based on 1980 population estimates of elderly for each county and the results of the survey that was administered to predict institutionalization. Available population estimates at the county level were limited in that they categorize all over-65 Montanans together, with no separation by sex or age over 65 (e.g., 65-74, and 75+). The survey instrument utilized was based on the Geriatric Functional Rating Scale which was successfully administered randomly to 1500 elderly throughtout the state. Estimates of the number of Montanans that could be expected to use alternatives if available are presented in Chapter 3. These projections are presented for each of the five State Health Planning Regions, as well as for urban and rural areas within each of the regions. While no specific age based projections could be performed due to data limitations, the strong relationship between the Geriatric Functional Rating Scale scores and age indicate that after age 80 the probability of needing nursing home care or an alternative increases (see Exhibit 3-10).

2.2.4. Annual Cost in Current Dollars for Each Alternative

Annual program cost for each alternative will vary greatly, depending on location (service costs vary by geographic area), client functional level, and the proportion of clients who are disabled. Annual service cost per client can be estimated from the data in Exhibit 4-1, assuming that the client receives the service for the entire year.

2.2.5. Number of Nursing Home Beds That Might Be Left Vacant

Indications are that no current nursing home beds would be left vacant if appropriate alternatives were in place and were utilized as estimated. This conclusion is based on discussions with ACCESS, a demonstration Community Care Organization project in Rochester, New York. The ACCESS experience indicates that alternative programs, in general, do not receive their clients from nursing homes, but rather divert candidates for nursing home care to alternatives. Therefore, in the short run, nursing home bed occupancy would not be significantly impacted. However, there is likely to be a significant decrease in the growth of nursing home bed requirements (occupancy) if appropriate alternatives are available and utilized.

Recommendations on Uses for Vacant Nursing Home Beds

Information is limited on possible uses for vacant nursing home beds. However, in some cases it may be possible to base alternative care services in nursing home facilities, converting some of the vacant bed space into administrative and social/recreational program use. Home health, homemaker, therapy services, meals (on wheels), and social/recreational services are provided in nursing homes and are also part of the alternatives under consideration. Greater utilization of food preparation services and larger case loads for physical therapists, occupational therapists, and speech therapists are examples of the types of utilization of resources that might result from the provision of services for alternative programs by nursing homes.

In considering this potential use for vacant nursing home beds, it must be recognized that it would be a potential conflict of interest to have the screening and case management activities of the coordinated, alternative program performed by the nursing home. That is, nursing home resources could potentially be utilized to provide services once ordered by the alternative care program; however, there is a potential conflict if the nursing home is also responsible for assisting the patient in deciding whether nursing home or alternative program placement is appropriate and the management of cases which are receiving services provided by the nursing home. This same potential conflict exists with all "competitive" service providers and has proved to be a problem in some alternative demonstration projects.

2.3. THE SURVEY

The significant component of this study was the conduct of a survey of 1500 elderly Montanans. The sampling plan for the survey was designed to sample 300 elderly from each of the five State Health Planning Regions. The sample was further stratified within each planning region, 100 elderly Medicaid recipients in nursing homes, 100 Medicaid users residing at home, and 100 non-Medicaid elderly residing is HUD housing. The latter group was chosen to represent the non-Medicaid elderly. All the sampling goals were achieved.

Several methodological steps were utilized to ensure a scientific, random sample. Counties were selected randomly within each Planning Region,

with sample size apportioned between urban and rural counties in four of the five regions where urban counties exist. By utilizing a prioritized county list within each Planning Region, a random cluster sample resulted. Each respondent selected for the sample was attempted to be surveyed up to three times, thereby minimizing any bias that would result from nonresponse. This combined sampling strategy resulted in surveys being completed in some of the most remote parts of the state. Detailed instructions for the survey were prepared and followed, ensuring uniformity in definition of survey responses over time and among the two surveyors.

The basic survey instrument utilized was the Geriatric Functional Rating Scale, an instrument that was developed in Canada by Grauer and Birnbom. One of the significant aspects of this study is that it is the first time that the Geriatric Functional Rating Scale has been used to predict institutionalization among the elderly community not known to be at risk. Its previous applications have been with elderly in institutions or referred as candidates for institutionalization or alternatives.

The survey results are presented in Chapter 3. The results include estimates of the number of elderly who would utilize alternatives to nursing home care if they were available within each Planning Region, including a further breakdown by urban and rural areas.

2.4. DEFINITIVE FINDINGS AND RECOMMENDATIONS

There are several definitive findings and recommendations resulting from this study. Many of these are presented in detail within the report.

1. The Geriatric Functional Rating Scale is a useful, practical instrument to predict population admission rates to nursing homes and alternative programs (subject to further validation).

2. The Montana volume estimates for the number of alternative program candidates are sufficient within each region to justify a regional program. In rural areas, multi-county programs will be required to generate sufficient volume to justify alternative programs and their individual components.

3. There is limited cost data on alternative programs and their individual components.

4. There is a need for a break out by age and sex of the population over age 65 at the county level. Recommended population data for planning purposes include: population age 65-74, 75-84, and 85 and above; with separate projections for male and female. Further demographic information that has potential significance includes income and whether or not the person lives alone.

5. There is a need to overcome financial barriers (with private insurance, Medicare, and Medicaid) to alternatives to nursing home care.

6. A follow-on study to validate the Geriatric Functional Rating Scale over time as a preditive measure for not-at-risk elderly is required. A validation study can assist in refining the instrument, including a study on changes in the transportation variables and in determining the role of the abilities section of the scale in determining the overall predication.

7. The Geriatric Functional Rating Scale has demonstrated ability to be used as a screening device for alternative (and nursing home) long-term care programs.

8. Fifty-three per cent of the elderly surveyed have one or more children residing in the same county with whom he or she gets along. Fifty-one per cent of those with children in the county report that more than $500 per year in support would have to be paid to the children to support them in the child's home. This finding has implications for HR. 4143, "Tax Credit for the Care of the Elderly Act of 1979" which is currently pending before Congress on the issue of providing tax credits to children who house their elderly parents.

9. Approximately 3% of Medicaid recipients in nursing homes score high enough on the Geriatric Functional Rating Scale to indicate independent living. Eighty-two per cent of the Medicaid recipients in nursing homes scored less than 20 on the Geriatric Functional Rating Scale, indicating likely institutionalization. For many of the others, no alternative is available. These findings indicate that for the elderly Medicaid population in nursing homes, Montana is performing better than the often quoted 20 to 25% inappropriate placements in nursing homes (for the elderly).

10. Any demonstration project undertaking to provide alternatives to nursing home long-term care needs to have a good evaluation component. Too many of the demonstration projects in this area have had insufficient evaluations to provide definitive conclusions regarding desirable characteristics and cost.

2.5. ORGANIZATION OF THIS REPORT

The remaining three chapters of this report contain detailed discussions on specific aspects of the study. Chapter 3 contains a description of the survey instrument and a report of the results based on 1500 random surveys of elderly Montanans. The results include projections of the number of elderly who would utilize alternative long-term care programs if they were available within each region. Chapter 4 presents service cost and volume estimates based upon data in the literature. Methodology is presented in this chapter to project nursing home bed and alternative volume requirements, including current nursing home bed surpluses and shortages within each region. Chapter 5 is a presentation of the information sources that were utilized to support the findings in this study. The two appendices, A and B, present the survey instrument with instructions and population estimates by Montana counties, respectively.

3. SURVEY INSTRUMENT AND RESULTS

3.1. JRB SURVEY QUESTIONNAIRE

The survey instrument utilized for this project was based on the prior work of Grauer and Birnbom (1975). Their instrument, the Geriatric Functional Rating Scale (GFRS) is a relatively short, survey questionnaire that can be administered by an individual with appropriate training, but does not require medical expertise. The GFRS had been validated by its developers in the institutional setting.

In order to develop consistent questionnaire administration, JRB prepared written instructions based upon the instructions supplied by Grauer and Birnbom, the Community Care Organization Project in Wisconsin which utilized the GFRS in an operational program, and JRB experience gained during the pretest of 85 surveys.

3.2. SURVEY METHODOLOGY AND ADMINISTRATION

Three population groups aged 65 and over were sampled with the survey instrument. A total sample size of 1500 was proposed as a goal and was achieved. Each sub-population group sample contains 500 respondents. The three population groups are: Medicaid users in nursing homes, Medicaid users not in nursing homes, and non-Medicaid elderly residing in boarding homes. The third group was chosen to represent the non-Medicaid elderly. This group was chosen to represent the non-Medicaid elderly since the population of all HUD-subsidized housing for the elderly is known, which allows for random sampling on a regional basis.

A random cluster sampling approach was utilized for all three population groups. Three hundred respondents were sampled in each of the five State Health Regions. Within each region, 100 respondents were sampled from each of the three groups. The random cluster sampling procedure, within each region, was designed to reflect the proportion of elderly living within urban counties within each region. A sequence of counties was selected randomly within each region, reflecting urban and rural sampling requirements. The utilization of counties as clusters preserves the random sampling requirement to present estimates of population statistics at the regional and state level. The cluster approach saved considerable travel and personnel time expense, or (since the

project budget was fixed) allowed for the collection of more surveys than a random sample would have provided. Non-random sampling procedures might have realized a much larger number of surveys completed; however, statistical estimates of population characteristics are invalid under such procedures, unless a census is taken.

This sampling approach has produced a study of unique characteristics. Perhaps the most significant is that pointed out by Dr. Linda Noelker at The Benjamin Rose Institute regarding a rigorous test of the GFRS instrument. One thousand of the respondents to this study form a unique baseline of non-institutionalized, randomly selected community aged who can be followed at one year intervals to validate the predictive ability of the instrument used. Dr. Noelker's comments are presented in Exhibit 3-1. Published "validation" studies have utilized aged who are either institutionalized or are candidates for institutionalization.

A number of steps were utilized to reasonably ensure the randomness of the sample obtained. Urban counties selected for the study were chosen randomly within Regions 4 and 5 which have multiple urban counties. Up to three survey attempts were made with each respondent, in an attempt to minimize any bias that might result from the non-respondents. Some of the most remote areas of the state were included in the survey. There was no deliberate exclusion of any unique sub-population or geographic area, with the exception of the Boulder, Galen State and Warm Springs State Hospitals. The residents of these three institutions were excluded from the Medicaid nursing home sampling process since they reflect statewide service and therefore their residents could not be described as being representative of regional characteristics.

3.3. SURVEY RESPONSE RATE AND COMPLETENESS

The number of surveys completed for each of the sample groups is presented in Exhibit 3-2. Response rates by sample groups vary from 66 to 97%. JRB held discussions and/or communicated by mail with the Montana Hospital Association, Montana Association for Aging, and the Montana Nursing Home Association in order to achieve maximum cooperation from the nursing home and boarding home administrators. This process was successful in that only two facilities refused to participate, Park Place Nursing Home in Great Falls and Hearthstone,

EXHIBIT 3-1

LETTER FROM DR. LINDA S. NOELKER

DEC 26 1979

The Benjamin Rose Institute

9300 Rose Building, Cleveland, Ohio 44115
216/621-7201

Executive Director
Barbara Silverstone, DSW

Associate Directors
Alan C. Beckman, Ph.D.
S. Walter Poulshock, Ph.D.
Harold E. Redick, CPA

December 19, 1979

Steven S. Lazarus, Ph.D.
Director - Denver Office
40 DTC West
7935 East Prentice Avenue
Englewood, Colorado 80111

Dear Dr. Lazarus:

Enclosed are two papers which we have presented on the issue of institutionalization of the aged and the use of Brauer and Birnbom's GFRS as a placement indicator. I have not seen a rigorous test of this instrument reported anywhere in the literature. That is, a study has not been conducted in which a population or random sample of community aged were surveyed with this instrument and then followed up for at least one year in order to assess the instrument's predictive validity. In our study we included only aged clients of the Institute who were recommended for placement compared with a sub-group of clients who received only home aide service.

To discover if any futher testing of the GFRS has been carried out, I suggest you contact the following person:

Mr. David Mangen
1114 Social Science Tower - Sociology
University of Minnesota
Minneapolis, Minnesota 55455
(612) 376-7178

He is responsible for a project which has compiled all instruments used in aging research as well as critiques of these instruments. The GFRS is included among them. I hope this material and information is helpful to you. If you have any additional requests, do not hesitate to call upon me.

Sincerely,

Linda S. Noelker, Ph.D.
Senior Research Associate

LSN:ne
Encl.

EXHIBIT 3-2

SURVEYS COMPLETED BY SAMPLE GROUP

SAMPLE POPULATION	NUMBER ATTEMPTED	NUMBER RESPONDING	PERCENTAGE RESPONDING
Medicaid, Nursing Home	513	500	97.5%
Medicaid, Non-Nursing Home	756	500	66.1%
Non-Medicaid, Non-Nursing Home	560	500	89.3%
TOTAL	1829	1500	82.0%

Inc. in Anaconda. In several other cases, individuals closely followed the JRB surveyors within the institution; however, although this was annoying and somewhat disruptive, it did not substantially interfere with the survey process.

The survey item completeness was very high. Exhibit 3-3 presents survey item completeness for the primary questions. The item numbers refer to the survey items which are fully described in Appendix A. All survey questions which normally would have been answered by all respondents have a response rate of at least 97.5%. Per cent completed statistics are all based on 1500 surveys; however, in many cases the proportion of the sample for whom the response is inapplicable is significant.

3.4. SIGNIFICANT ADMINISTRATIVE ISSUES

Montana Department of Social and Rehabilitation Services was very cooperative in supplying the lists of Medicaid recipients. At times, staff were under great pressure to produce these materials in time for the study to proceed. Many minor problems were encountered; however, these materials were prepared and delivered in a timely manner which allowed the study to proceed, an accomplishment which JRB has not always found achievable by Medicaid programs in other states.

JRB surveyors experienced some difficulty in finding Medicaid recipients with post office box addresses. Lack of frequent airplane services and a shortage of motel space (due to the increase in activity related to the development of the Williston Basin) in Eastern Montana required that thorough advance planning be utilized to efficiently conduct surveying in this Region. Weather throughout the winter was relatively cooperative, with major storms primarily occurring while JRB personnel were in Denver preparing for future surveying trips. In only one instance a flight was cancelled because of bad weather.

In Lewistown, Montana a JRB surveyor was sought by the local police for three days due to a complaint lodged by either a respondent or a non-respondent. When eventually apprehended for questioning, the JRB surveyor was able to adequately explain his presence with the help of the identification card provided by the Department of Health and Environmental Sciences. However, this experience was disruptive to completing surveys in the facility where he was apprehended.

EXHIBIT 3-3

SURVEY ITEM COMPLETION*

SURVEY ITEM	NUMBER OF SURVEY ITEMS COMPLETED	NUMBER INAPPLICABLE	NUMBER NO ANSWER	PERCENT COMPLETED
GFRS SCORE	1500	0	0	100
31. Sex	1500	0	0	100
32. Age	1484	0	16	98.9
33. Type Residence	1500	0	0	100
34. Race	1496	0	4	99.7
35. Income Level	1474	0	26	98.3
36. Children in County	1462	0	38	97.5
37. Financial Support	646	688	166	44.2**
38. Own Car	1497	0	3	99.8
39. Private Insurance	1475	0	25	98.3
40. Cover Home Care	427	1053	20	28.9**
41. NH Placement Chosen	479	1000	21	31.9
42. Financial Status Stable	52	1447	1	3.5
43. Sell Possessions	52	1447	1	3.5
44. Duration Independence	45	1447	8	3.0

*Includes only survey responses, non-responses excluded
Percent completed based on 1500 surveys

**Items 37 and 40, "percent-completed", are based on Items 36 and 39, respectively

Subsequent to this event, local police departments were notified of JRB personnel surveying activities prior to their commencement.

Respondents to the survey can be hostile. In one instance, an interviewer was chased by a lady with a kitchen knife when she answered his knock at the door. Bystanders can also be unfriendly. An interviewer was accosted by a young adolescent with a knife when he tried to conduct interviews on the "wrong side of town" and on another occasion he was "crowded" by a group of young Native Americans asking for money.

Although severe weather problems did not seriously hinder the conduct of this survey during the winter, problems were encountered. One interviewer suffered a mild "post impact trauma" after falling on ice in a parking lot. This fall resulted in periodic dizziness for about one week. In general, it is preferable to conduct statewide studies in the summer months when the weather is more favorable.

Interviewers need to be capable of confronting and handling the emotional issues faced when conducting surveys of the elderly. In several cases, respondents were experiencing emotional trauma and needed to talk to someone. Interviewers must have the capability to draw a line between being dedicated to completing their work and being compassionate. In some cases, residential units were literally uninhabitable, necessitating great courage merely to enter and sit down to conduct the interview.

A relatively short survey instrument was designed for this study. This decision proved to be a wise one. The survey response rate is high as is the item completeness rate. These statistics are frequently much lower for lengthy survey instruments. In addition, there have been several significant air fare increases between the time that the project was proposed and the survey activity was completed. By being able to administer the survey instrument efficiently and planning travel according to the cluster pattern of the random sample, the impact of the increased air fare costs was minimized. In addition, on several occasions the surveyors worked ten days straight in Montana and took four days off, thus saving several round trip air fares between Denver and Montana.

In summary, the survey process went very well, primarily due to good administrative and efficiency planning. Most of the problems encountered could

not have been overcome by better planning, with the single exception of conducting the survey during a warmer season.

3.5. INTERPRETATION OF SURVEY RESULTS

The remaining sections of this report contain several tables reporting results of the survey. There are two important factors to keep in mind when interpreting these tables. First, all of the percentage estimates are single point estimates. Exhibit 3-4 presents the interval ranges around these percentages as a function of sample size. For example, if the survey shows that in Region 1 2% of the nursing home population has independent functional ability, then the 90% confidence interval around that 2% is approximately plus or minus 5%. In other words, at this confidence level, the percentage could be as high as 7% or as low as 0. At the state level sample of 1500 the same level of confidence is achieved with plus or minus 1%. All of these estimates are approximate and will vary somewhat based upon the specific percentage under consideration. In addition, it must be recalled that the survey instrument is not perfect and therefore relatively small percentages (in the 2 to 5 range) may not be significant.

Several of the statistical tables in Sections 3.6 and 3.7 contain separate presentations for urban and rural areas. For the purposes of this study, seven Montana counties were defined as urban. They are listed in Exhbit 3-5 based upon an estimated 3,000 or more elderly residents within the county in 1980.

3.6. STATE LEVEL SURVEY RESULTS

A total of 1500 surveys were completed for state level analysis. Appendix B contains 1975 and 1985 population projections for each Region. 1980 estimates utilized in this study are based on averaging the 1975 and the 1985 projections. Exhibits 3-6 and 3-7 present estimates of the Montana Medicaid users over 65 nursing home population and non-nursing home population respectively. The data in these tables are based on January, 1980 user information. For the Medicaid nursing home population, the sample has 18% under the age of 75 compared with 20% for the population. The Medicaid nursing home sample is 75% female compared with 71% female for the population.

EXHIBIT 3-4

APPROXIMATE CONFIDENCE INTERVALS

Sample Size, n	p, Population Proportion	90% Confidence Interval of p
100	0.1	0.05 to 0.15
300	0.1	0.07 to 0.13
1500	0.1	0.09 to 0.11

EXHIBIT 3-5

MONTANA COUNTIES WITH MORE THAN 3,000 ELDERLY

	Region	County	Major City
1.	Eastern	None	
2.	North Central	Cascade	Great Falls
3.	South Central	Yellowstone	Billings
4.	Southwestern	Gallatin	Bozeman
		Lewis & Clark	Helena
		Silver Bow	Butte
5.	Northwestern	Flathead	Kalispell
		Missoula	Missoula

EXHIBIT 3-6

MONTANA MEDICAID USERS OVER 65
NURSING HOME POPULATION BY REGION
AND SEX

Region	TOTAL		AGED 65-74		AGED 75+	
	Number	% Female	Number	% Female	Number	% Female
1	284	63%	61	44%	223	68%
2	632	69%	124	60%	508	71%
3	707	69%	132	52%	575	73%
4	790	75%	185	65%	605	78%
5	647	72%	100	68%	547	73%
State Total:	3060	71%	602	60%	2458	74%

EXHIBIT 3-7

MONTANA MEDICAID USERS OVER 65
NON-NURSING HOME POPULATION BY REGION
AND SEX

Region	TOTAL		AGED 65-74		AGED 75+	
	Number	% Female	Number	% Female	Number	% Female
1	358	64%	168	64%	190	65%
2	859	62%	457	57%	402	68%
3	748	62%	399	62%	349	63%
4	657	72%	326	65%	331	78%
5	772	69%	367	65%	405	72%
State Total:	3394	66%	1717	62%	1677	69%

The Medicaid user at home sample is 47% aged under 75 compared with 50% for the population. Sixty-six per cent of the Medicaid user at home population is female compared with 73% surveyed in this category. There is no reason to believe that these small differences in any way bias the interpretation of the survey results. It is important to remember when interpreting Exhibits 3-8 through 3-10, these are survey statistics which are not adjusted for the proportions of the population that are Medicaid nursing home, Medicaid users at home, and non-Medicaid.

Exhibit 3-8 presents statewide results by survey item. These results are based upon 1500 surveys and include both nursing home and non-nursing home respondents. The average GFRS score is 31.64 which means that the average respondent needs alternative care. Seventy per cent of the population surveyed have incomes below $2500 per year. Twenty-nine per cent have private health insurance and 42% of these policies include home care benefits.

Exhibit 3-9 presents the percentage distribution of GFRS scores by age group for the entire state. It is particularly significant to note the results in the column "Less than 20" which relates to appropriate placement in a nursing home. As the elderly get older, the proportion requiring nursing home placement grows significantly.

Exhibit 3-10 describes the relationship of GFRS to age for the entire state. The GFRS score of 20 is significant in that it is below this score where institutional placement is indicated. There is a relative stability in the elderly population's functional ability through approximately age 80. Between age 80 and 85, there is a decline in functional ability, and beyond age 86 a significant portion of the elderly population require institutional care.

Montana GFRS scores for the three population groups, for rural and urban areas, are presented in Exhibit 3-11. The most striking differences between the urban and rural areas are reflected in the Medicaid user and nursing home scores, where there appears to be a higher tendency to use nursing homes in rural areas, probably because of reduced opportunity for alternative care in rural communities. Exhibit 3-12 presents average GFRS scores by status and region. A few observations in this Exhibit are noteworthy. First, the relatively low GFRS scores for Medicaid recipients in nursing homes in Regions

EXHIBIT 3-8

STATEWIDE RESULTS BY SURVEY ITEM

ITEM	STATISTIC	VALUE
GFRS Score	mean	31.64
% Medicaid Recipients	percentage	66.6%
% Female	percentage	74.8%
% Nursing Home Residents	percentage	33.3%
% White	percentage	97.3%
% Below $2500 Income	percentage	70.1%
% With Children in County	percentage	52.9%
% responding that children would need more than $500/yr to support them in child's home	percentage	51.2%
% Own, Use car	percentage	15.0%
Private Health Insurance	percentage	28.7%
% with private health insurance covering home care	percentage	1.7%
% Financially Independent	percentage	3.2%
% Stable	percentage	18.8%
% Selling Possessions to stay independent	percentage	16.6%
% "Permanent"	percentage	89.6%
Nursing Home Residents		
% Medically Placed	percentage	79.1%

EXHIBIT 3-9

PERCENTAGE OF GFRS SCORES BY AGE GROUPS, STATE OF MONTANA

Sample size, n = 1484

Age Group	n	GFRS		
		Less than 20	20-39	40 and above
65-74	447	15.4%	15.7%	68.9%
75-84	605	26.0%	13.1%	61.0%
85-95	406	48.3%	17.2%	34.5%
95-105	26	73.1%	19.2%	7.7%

EXHIBIT 3-10

RELATIONSHIP OF GFRS TO AGE, STATE OF MONTANA

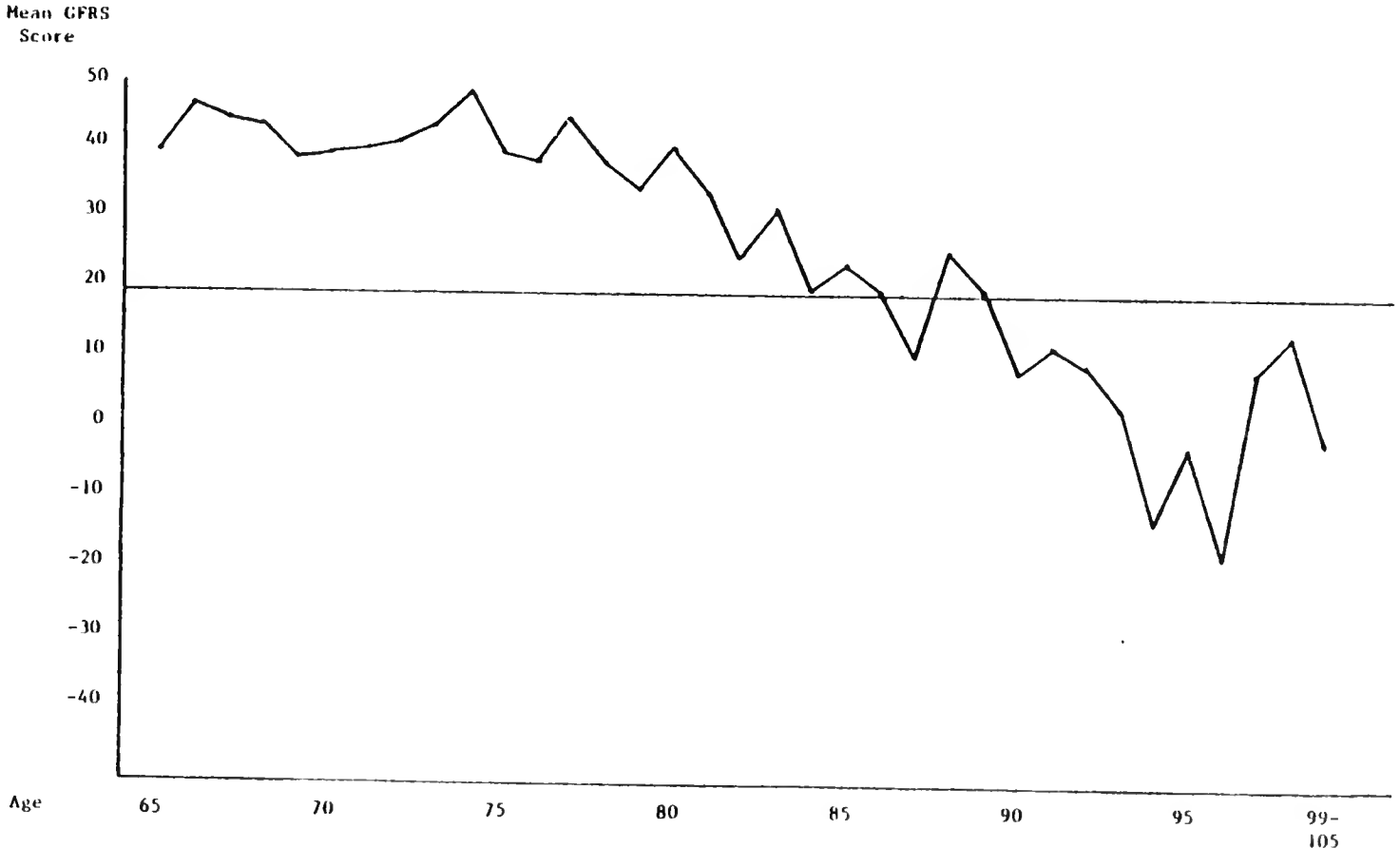

EXHIBIT 3-11

STATE OF MONTANA GFRS SCORES

TABLE a. RURAL (n = 828)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	3%	14%	83%
Medicaid at Home	7%	13%	80%
Medicaid in Nursing Home	78%	19%	3%

TABLE b. URBAN (n = 672)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	5%	14%	81%
Medicaid at Home	2%	17%	81%
Medicaid in Nursing Home	86%	12%	2%

EXHIBIT 3-12

GFRS AVERAGE SCORE BY STATUS AND REGION

Region	STATUS		
	Not Medicaid	Medicaid at Home	Medicaid in Nursing Home
1	57.53	49.74	- 5.13
2	46.74	42.27	-14.70
3	50.98	52.68	- 3.09
4	53.76	49.19	- 6.03
5	56.83	55.64	-12.10
State of Montana	53.17	49.90	- 8.21

2 and 5 indicate lower functional abilities of the nursing home residents in these two regions (perhaps an indicator of more appropriate placement in nursing homes). The relatively high GFRS scores in Region 5 of the two populations at home indicate an appropriate dichotomy between the institutionalized and non-institutionalized elderly in this Region. The relatively low scores for the two populations at home in Region 2 perhaps indicate a larger need for alternative programs since a significant portion of the population at home in this Region would have scores below 40.

Exhibit 3-13 presents a summarized statistical analysis of those variables which relate most significantly to GFRS. The presentation is divided into two sample groups, nursing home with a sample size of 500 and residents at home with a sample size of 1,000. A minus sign preceding the correlation coefficient indicates a negative relationship, which is true for age which is expected. For the nursing home sample, a correlation coefficient of absolute value exceeding 0.115 is significant at the 1% level. For the residing at home sample of 1,000, a correlation coefficient of absolute value exceeding 0.081 is significant at the 1% level. Based on the results from the residing at home sample, further study is warranted to investigate the following variables to possibly develop a predicting formula to predict institutionalization or use of an alternative: age, sex, use car, use telephone, private health insurance, and income. A longitudinal over time study is required for further analysis.

3.7. SURVEY DATA ANALYSIS BY REGION

The series of Exhibits in this Section are organized by Region. The first Exhibit for each Region presents the percentage distribution of GFRS score by status. It is important to note that GFRS scores of less than 20 generally indicate institutionalization, scores between 20 and 39 indicate a support requirement (alternative to institutionalization), and scores of 40 and above indicate functional independence. The analysis for each Region is conducted separately for rural and urban areas, with the exception of Region 1 which has no urban area.

Exhibits 3-16 through 3-18 will be used for illustrative purposes to explain the information presented for each Region. Exhibit 3-16 depicts the status and GFRS relationship for the rural and urban areas of Region 2. As

EXHIBIT 3-13

GFRS STATISTICAL STATEWIDE CORRELATIONS

Variable	GFRS CORRELATION COEFFICIENT: Nursing Home Sample, n = 500	GFRS CORRELATION COEFFICIENT: Residing at Home Sample, n = 1000
Age	-0.206	-0.199
Sex (1=male)	0.167	-0.098
Urban County (1=Urban)	-0.121	0.069
Use Car	0.104	0.211
Use Telephone	0.097	0.260
Insurance	0.037	0.187
Income	*	0.161

*Cannot be computed

NOTES: For a sample size of 500, a correlation coefficient of $|0.115|$ or larger is significant at the 1% level.

For a sample size of 1000, a correlation coefficient of $|0.081|$ or larger is significient at the 1% level.

EXHIBIT 3-14

REGION 1 - STATUS AND GFRS SCORE

Table a. RURAL (n = 300)

STATUS	GFRS		
	Less than 20	20-39	40 and above
Not Medicaid	2%	9%	89%
Medicaid at Home	7%	8%	85%
Medicaid in Nursing Home	80%	16%	4%

EXHIBIT 3-15

REGION 1 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	284 x 20 = 57	0
Medicaid at Home % GFRS Less than 40	353 x 15 = 53	353 x ½% GFRS 20-39, 4 = 14
Non-Medicaid % GFRS Less than 40	10508 x 11 = 1156	10508 x ½% GFRS 20-39, 4.5 = 473
Total Estimate:	1266	487

EXHIBIT 3-16

REGION 2 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 141)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	4%	24%	72%
Medicaid at Home	6%	26%	68%
Medicaid in Nursing Home	83%	15%	2%

TABLE b. URBAN (n = 159)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	8%	21%	72%
Medicaid at Home	4%	36%	60%
Medicaid in Nursing Home	89%	11%	0%

EXHIBIT 3-17

REGION 2 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	289 x 17% = 49	0
Medicaid at Home % GFRS Less than 40	485 x 32% = 155	485 x ½% GFRS 20-39, 13 = 63
Non-Medicaid % GFRS Less than 40	6022 x 28% = 1686	6022 x ½% GFRS 20-39, 12 = 723
Total Estimate:	1890	786

EXHIBIT 3-18

REGION 2 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	343 x 11% = 38	0
Medicaid at Home % GFRS Less than 40	374 x 40% = 150	374 x ½% GFRS 20-39, 18% = 67
Non-Medicaid % GFRS Less than 40	6758 x 29% = 1960	6758 x ½% GFRS 20-39, 10.5% = 710
Total Estimate:	2148	777

EXHIBIT 3-19

REGION 3 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 138)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	6%	20%	74%
Medicaid at Home	11%	11%	78%
Medicaid in Nursing Home	63%	35%	2%

TABLE b. URBAN (n = 162)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	2%	11%	87%
Medicaid at Home	2%	7%	91%
Medicaid in Nursing Home	81%	17%	2%

EXHIBIT 3-20

REGION 3 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	344 x 37 = 127	0
Medicaid at Home % GFRS Less than 40	347 x 22 = 76	347 x ½% GFRS 20-39, 5.5 = 19
Non-Medicaid % GFRS Less than 40	6443 x 26 = 1675	6443 x ½% GFRS 20-39, 10 = 644
Total Estimate:	1878	663

EXHIBIT 3-21

REGION 3 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	363 x 19 = 69	0
Medicaid at Home % GFRS Less than 40	401 x 9 = 36	401 x ½% GFRS 20-39, 3.5 = 14
Non-Medicaid % GFRS Less than 40	8547 x 13 = 1111	8547 x ½% GFRS 20-39, 5.5 = 470
Total Estimate:	1216	484

EXHIBIT 3-22

REGION 4 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 117)

STATUS	GFRS Less Than 20	GFRS 20-39	GFRS 40 and above
Not Medicaid	0%	10%	90%
Medicaid at Home	3%	20%	77%
Medicaid in Nursing Home	77%	20%	3%

TABLE b. URBAN (n = 183)

STATUS	GFRS Less Than 20	GFRS 20-39	GFRS 40 and above
Not Medicaid	8%	18%	74%
Medicaid at Home	2%	15%	84%
Medicaid in Nursing Home	90%	8%	2%

EXHIBIT 3-23

REGION 4 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Homes % GFRS 20+	163 x 23 = 37	0
Medicaid at Home % GFRS Less than 40	130 x 23 = 30	130 x ½% GFRS 20-39, 10 = 13
Non-Medicaid % GFRS Less than 40	7682 x 10 = 768	7682 x ½% GFRS 20-39, 5 = 384
Total Estimate:	835	397

EXHIBIT 3-24

REGION 4 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	129 x 10 = 13	0
Medicaid at Home % GFRS Less than 40	103 x 17 = 18	103 x ½% GFRS 20-39, 7.5 = 8
Non-Medicaid % GFRS Less than 40	11,281 x 26 = 2933	11,281 x ½% GFRS 20-39, 9 = 1015
Total Estimate:	2964	1023

EXHIBIT 3-25

REGION 5 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 132)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	4%	14%	82%
Medicaid at Home	5%	9%	86%
Medicaid in Nursing Home	86%	14%	0%

TABLE b. URBAN (n = 168)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	0%	7%	93%
Medicaid at Home	2%	9%	89%
Medicaid in Nursing Home	82%	14%	4%

EXHIBIT 3-26

REGION 5 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	253 x 14 = 35	0
Medicaid at Home % GFRS Less than 40	343 x 14 = 48	343 x ½% GFRS 20-39, 4.5 = 15
Non-Medicaid % GFRS Less than 40	7342 x 18 = 1322	7342 ½% GFRS 20-39, 7 = 514
Total Estimate:	1405	529

EXHIBIT 3-27

REGION 5 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate		Low Estimate	
Medicaid in Nursing Homes % GFRS 20+	394 x 18 =	71		0
Medicaid at Home % GFRS Less than 40	429 x 11 =	47	429 x ½% GFRS 20-39, 4.5 =	19
Non-Medicaid % GFRS Less than 40	9854 x 7 =	690	9854 x ½% GFRS 20-39, 3.5 =	345
Total Estimate:		808		364

is expected, relatively small percentages of the non-Medicaid and Medicaid user at home populations have scores of less than 20 which would indicate institutionalization. Also, relatively small percentages of residents in nursing homes have scores above 40 which indicate independent functional ability. In this Region and several others, significant proportions of the institutionalized and non-institutionalized populations have scores ranging from 20 to 39 which predict the utilization of an alternative to nursing home care. The GFRS scores are predictive in nature, and therefore some discrepancies of placement versus GFRS score are expected. It is also important to note that a person residing in a nursing home may have been appropriately placed in the nursing home at time of admission and at the time of survey may have been able to utilize an alternative or return to independent living, but these alternatives may not be available. In interpreting the first Exhibit for each Region, attention should be focused on the percentage of each category with scores ranging from 20 to 39, the range in which alternatives to nursing home care apply.

The second set of presentations for each Region consists of one or two estimates of channeling alternative candidates. The channeling alternative to nursing home care is presented for discussion purposes here, since day care programs are very expensive and require large service loads to be potentially efficient. It is unlikely that these large service loads will materialize in Montana in most communities.

Exhibit 3-17 presents the estimates of alternative care candidates for the rural area of Region 2. Both a high estimate and low estimate are presented. The high estimate calculation for Medicaid recipients in nursing homes who would be eligible for the alternative is performed by multiplying the number of Medicaid recipients in nursing homes in the rural part of Region 2 by the percentage of surveyed Medicaid recipients in nursing homes in the rural part of Region 2 who scored 20 and above on the GFRS (this information is obtained from Exhibit 3-16, Table a). The result is 49 nursing home residents who could be displaced from nursing homes if suitable alternatives and the administrative mechanisms are available. The low estimate for Medicaid recipients in nursing homes is 0. This estimate is utilized based on JRB's discussion with ACCESS personnel in Rochester, New York who indicated that almost

no alternative to long term care program clients come to the program from nursing homes. However, the program is very successful in providing an alternative to some who are seeking nursing home placement. The second calculation of estimating channeling candidates is performed for the Medicaid at home users. The number of Medicaid at home users in the rural part of Region 2 (485) is multiplied by the percentage of surveyed respondents in this category in the rural counties of Region 2 who have GFRS scores of less than 40. The high estimate yields 32% in this category for a total number of 155. The low estimate takes the same population base of 485 and multiplies it by one-half of the percentage of the sample in this status category who have GFRS scores ranging from 20 to 39. This yields 63 candidates. This more conservative approach is taken by addressing only those who have scores which indicate the use of the alternative and assumes that only half of them would participate in an alternative program. The other half might go into nursing homes or might continue to live in the present arrangement with or without support from family and friends.

The non-Medicaid user population for the rural area of Region 2 is calculated by averaging the 65 and over population estimates for the rural counties in Region 2 (see Appendix B) and then subtracting the Medicaid users at home and in nursing homes from the same geographic area. This results in 6022 as the population base for this category. No adjustment was made for non-Medicaid recipients in nursing homes, but it is believed that this is a relatively small proportion of all non-Medicaid recipients living in the geographic area. The high estimate for this Region is based on multiplying this population estimate by the percentage of the respondents in this category who have GFRS scores less than 40. The low estimate is calculated by multiplying this population by one-half the percentage of the respondents in this category who have GFRS scores ranging from 20 to 39. The resulting high and low estimates for this geographic area are 1890 and 786 respectively.

The high and low estimates of the number of candidates for alternatives to nursing home care is presented in this Section for nine geographic regions. Each region has at least 364 (low estimate) candidates for alternative programs. Similar calculations can be performed for subsets of the geographical entities identified in this Section. Each geographic area analyzed in this Section has

a sample size of at least 117. This study was designed to be able to make these types of projections at the state and regional level. Projections at the county or sub-regional level may or may not be appropriate, depending upon the characteristics of the population and the geographic base of the sample utilized. Exhibits 3-14 to 3-27 present the Regional projections.

3.8. SPECIAL ANALYSES: SURVEY ITEMS STATISTICS

Exhibit 3-28 presents the mean and standard deviation for several variables collected with the survey instrument. Of particular note is the GFRS score variable, which has a mean of 31.56 and a standard deviation of 35.0. It is significant that the mean falls within the range of the middle scale of importance (20-39) and that the standard deviation is large. A useful predictive instrument of this type should have a relatively wide dispersion of responses from a sampled population and the distribution of scores should be somewhat centered around the middle of the range of interest. The GFRS appears to perform well on both of these parameters. The statistics for survey items 33-44 are best interpreted by referring to the survey questionnaire in Appendix A.

Characteristics of the non-nursing home sample by GFRS score level are presented in Exhibit 3-29. This Exhibit illustrates the dispersion of scores that result among the non-nursing home sample, thereby confirming the appropriateness of the GFRS as a survey instrument which can measure diverse responses from a non-institutionalized population of elderly. Statistics are presented for the sample only. Respondents scoring below 20 are older, have lower income, and are more likely to be on Medicaid.

EXHIBIT 3-28

SURVEY ITEM STATISTICS

SURVEY ITEM	NUMBER OF VALID OBSERVATIONS	MEAN	STANDARD DEVIATION
GFRS SCORE	1500	31.56	35.00
P.O. Box Number (1=yes)	1500	0.03	0.16
Phone Number (1=yes)	1500	0.58	0.49
Urban County (1=yes)	1500	0.45	0.50
31. Sex (1=male)	1500	0.25	0.43
32. Age	1484	79.41	7.98
33. Type of Residence	1500	2.87	1.05
34. Race	1496	1.04	0.22
35. Income	1474	1.34	0.56
36. Children in County	1462	0.53	0.50
37. Financial Support for Housing	646	2.55	0.62
38. Own and Use Car	1497	0.15	0.36
39. Private Health Insurance	1475	0.29	0.45
40. Insurance for Home Care	427	0.02	0.13
41. Reason for Nursing Home	500	1.81	0.41
42. Financial Status Stability	52	0.17	0.38
43. Sold Possessions	52	0.15	0.36
44. Duration of Independence	45	2.91	0.42

NOTE: Refer to Survey in Appendix A for Survey item question and response details.

EXHIBIT 3-29

CHARACTERISTICS OF THE NON-NURSING HOME SAMPLE

(N = 1000)

	Subsample GFRS Below 20	Subsample 20 - 39	Subsample 40 +
% Non-Medicaid	45.2	49.0	50.4
Mean Age	81.4	79.9	77.2
% Under $2500 Income	69.2	54.9	53.2
2500 - 7500	25.6	38.2	39.0
7500 +	5.1	6.9	7.8

ITEM (% scoring)	Score			
Eyesight	-3	59.5	29.0	16.2
	-10	14.3	9.0	1.1
Hearing	-3	42.9	42.1	26.1
	-5	26.2	15.2	4.7
Mobility	-3	26.2	34.5	23.5
	-15	38.1	44.8	4.6
Pulmonary/Cardio	-3	26.2	33.8	33.6
	-20	14.3	4.8	0.0
Diet	-3	47.6	55.2	51.5
Disorientation	-3	73.8	46.9	16.6
	-15	11.9	1.4	0.0
Delusions	-3	21.4	7.6	6.6
	-10	2.4	2.8	.7
Memory Loss	-3	59.5	65.5	40.8
	-20	21.4	.7	.1
Energy & Drive	-5	31.0	13.8	7.0
Judgment	-5	28.6	9.7	2.2
Hallucinations	-10	7.1	.7	0.0

4. COST AND UTILIZATION OF ALTERNATIVES

4.1 INTRODUCTION

Several data were utilized to determine unit cost and volume estimates for the current Montana economic environment for each alternative to nursing home care. Ideally, volume requirements are to be expressed in numbers of units per person per year. The dearth of information on this subject in the literature and the relatively small number of operational alternative programs with useful cost data results in cost estimates which are approximations at best and based to a large extent on current experience in Montana.

Alternative care programs (Community Care Organizations) in Colorado; Rochester, New York; and Wisconsin are also utilized as sources of volume and cost data. These three programs (and several others partially funded by the Federal Government) provide case assessment, case management and coordination, and services which are often not covered by public and private insurance programs.

There are several difficulties associated with converting existing data in the literature to the current Montana economic environment. Nationwide studies, particularly those dealing with urban areas, are sometimes based upon small samples and therefore are not readily interpretable for the entire nation or easily converted to the current Montana situation. Large metropolitan settings contain the potential for economies of scale and competition in the private sector which may not be possible in rural and small urban Montana settings. Several service studies include the elderly with other populations; e.g., disabled, children, mentally retarded, etc. Some studies reflect Medicaid expenditures whereas others are based on charges. All too frequently, the literature and Congressional testimony reflect volume and cost data based upon very small samples and estimated costs (instead of actual cost). Finally, the definition of several individual services poses a problem in that different definitions and interpretations are used by different programs.

All of the above problems associated with converting cost and volume requirements to the current Montana economic environment highlight

the need to be cautious in undertaking such a conversion and the need to rely on available Montana data as the best information in those cases where it is available. Section 4.2 presents unit cost estimates. Sections 4.3 and 4.4 present a discussion on volume estimates, including estimates for nursing home beds or alternatives.

4.2. UNIT COST ESTIMATES

4.2.1. Service Definitions

Exhibit 4-1 depicts the services, the unit volume requirements, and estimated cost for this study. The lefthand column indicates the services for nursing home care and alternatives. There is a great variation in the definitions of these services. General definitions are as follows:

- Nursing homes are licensed facilities categorized usually as skilled nursing facility and/or intermediate care facility. Usually, these facilities are certified for Medicare and Medicaid.

- Congregate housing may include facilities with some or all of the following characteristics:

  - HUD-Section 8, 202,231D, 236
  - Farmers Home 515 (often includes HUD-Section 8 subsidy)
  - Adult foster care facilities
  - May include personal care facilities
  - Residential care facilities
  - Boarding homes
  - Personal care boarding homes.

  The licensing agency for congregate housing varies by state. Usually the licensing agency is the health or social services department. Some congregate housing facilities offer no services whereas others offer a full range of medical, social, transportation, and other supportive services.

- Home care services include professional services and may or may not include other services. Frequently, the homemaker service is distinguished by basically focusing on the home environment and not the patient, as distinct from home health services which are supportive directly of the patient (and may include personal hygiene services). Standard definitions for

home care services are required before significant meaning can be attached to the cost or volume aspects of these services, and currently these standard definitions do not exist. Important variables in developing a standard definition include: the skill, education, and licensure of the provider; whether or not the service is directly applied to the recipient or to the recipient's home environment; and duration/frequency of service delivery. A further complication in this definitional area is that many home care programs are designed for urban settings where travel distances are relatively short and it is relatively efficient to have the ideal skill level provider providing service. However, in rural areas it is frequently the case that travel distances are long and it may be most efficient for one provider to provide all support services required during the visit.

- Meals can be delivered on wheels to the person's residential location or can be provided on site at a central location, in which case the recipient travels to the central location for the meal. This latter program is usually funded under Title VII of the Older Americans Act. The designation of this program was recently changed to Title 3, Section C of the Older Americans Act. In both meals programs, some minor assistance in eating may be given.

- Counseling, information/referral and outreach all cover a range of services for planning the legal, financial, and family support of the recipient.

- Repair services include minor repairs and winterization.

- Personal care facilities are licensed to provide personal assistance care such as bathing, dressing, and eating. Personal care facilities do not take responsibility for medical care. They can supervise the taking of medication, but cannot directly administer the medication.

4.2.2. Montana Data

The Montana cost data depicted in Exhibit 4-1 are based on information supplied by the Montana Department of Social and Rehabilitation Services, Aging Services Bureau and Medical Assistance Bureau. These unit costs represent current cost levels at the end of 1979. They are based on Title XIX (Medicaid), Title XVIII (Medicare), and Title XX experience in Montana.

EXHIBIT 4-1

ESTIMATES OF MONTANA UNIT SERVICE COST BASED ON LITERATURE AND ALTERNATIVE PROGRAM EXPERIENCE

	UNIT VOLUME/ YEAR	MONTANA[1] MEDICAID, TITLE XX COST/UNIT 1979	WISCONSIN[2]	COLORADO	LITERATURE	ROCHESTER, NEW YORK[16]	ADJUSTED MONTANA COST ESTIMATES
NURSING HOME	365 days/ year	15.13-37.14/ day		22.75[3]	24.04/day[11] (1978)national	27.00-45.00/ day (1979)	$15.13-$37.14/ day
CONGREGATE HOUSING	365 days/ year	4.00-10.00/ day			10.45-15.25/[12] day(1974-75)		$4.00-$10.00/ day
CCO	1 enrollment day/day[a]		5.33-8.18 (capped at $15/day)	2.68[4]		3.88-22.83/ day enrolled (Dec.77-July 79)	$3.88-$22.83/ day enrolled
ADULT DAY CARE	3-4 days/ week[b]				21.04-52.00/[13] day		$21.04-$52.00/ day
HOME CARE	1-2 visits/[c] week			9.28-16.24/[5] visit	7.00-20.29/[14] visit		$7.00-$20.29/ visit
- MAKER		9.00-10.30/ hour					$9.00-$10.30/ hour
- HEALTH		18.00-26.00/ visit			15.96/day(1974)		$18.00-$26.00/ visit
- OTHER		15.00/visit					$15.00/visit
MEALS -ON WHEELS	5-21/week[d]	1.79/meal		2.00/meal[6]	1.30/meal[15]		$1.79/meal
-ON SITE (VII)	1.1/person/[e] month			1.65-3.00/meal[7]			$1.65-$3.00/ meal

-continued-

EXHIBIT 4-1 (continued)
ESTIMATES OF MONTANA UNIT SERVICE COST BASED ON LITERATURE AND ALTERNATIVE PROGRAM EXPERIENCE
Page 2

	UNIT VOLUME/ YEAR	MONTANA[1] MEDICAID, TITLE XX COST/UNIT 1979	WISCONSIN[2]	COLORADO	LITERATURE	ROCHESTER,[16] NEW YORK	ADJUSTED MONTANA COST ESTIMATES
COUNSELING		1.26/session					$1.26/session
REPAIR		$141.67/ project		$300.56/[8] project			$141.67/ project
INFORMATION/ REFERRAL		1.05/visit					$1.05/visit
OUTREACH		.34/visit					$0.34/visit
TRANSPORTATION		.82/one way per person		1.39/one way[9] per person			$0.82-$1.39 one way per person
ASSESSMENT	1-4 per year					$33-$41/ assessment	$24.00-$30.00
PERSONAL CARE FACILITIES	365 days/ year			Est.[10] 8.39-14.33/ day		16.00/day	$8.39-$14.33/ day

4.2.3. Other Data Sources

Limited data on service cost are available from Community Care Organization projects in Wisconsin, Colorado, and Rochester, New York. These data, together with other available Colorado data and the cost data reported in the literature are included in Exhibit 4-1. The explanation of the sources of the data in each case are footnoted in Exhibit 4-1, with the footnote explanations contained in Exhibit 4-2. Several of the literature references (footnotes 11-15) are summarized in Chapter 5.

4.2.4. Conversion of Cost Data to the Current Montana Economic Environment

Several interpretative steps were utilized to convert cost data to the current Montana environment. The primary approach utilized to convert Colorado and Rochester, New York data to the current Montana environment is to utilize the nursing home cost data as the basis of comparison. A ratio was taken of the Colorado average nursing home cost and the mid-range nursing home cost for Rochester, New York to the mid-range of the Montana nursing home cost. This ratio was used to convert other Colorado and Rochester, New York costs to the current Montana environment by multiplying each resulting ratio by the unit service cost. The result of these converted cost figures taken together with the Montana data provides an adjusted Montana cost estimate range. Frequently, the adjusted data fell within the available Montana data, thereby giving some validity to the procedure. The overall range of unit cost is the one generally depicted in the righthand column of Exhibit 4-1. Exceptions to this process were required for the Wisconsin and literature data. The Wisconsin data cannot be converted by ratio since no nursing home cost estimate is available. Therefore, Wisconsin data was used without conversion, probably a reasonable process for the Community Care Organization data which reflects both urban and rural settings. Finally, conversion from cost data in the literature to the current Montana economic environment was accomplished by utilizing expert judgment in each case. Expert judgment takes into account the representativeness of the national study data and its applicability to a generally rural environment. In those cases where only literature data were available, this is the cost information that is recorded as the Montana estimate.

EXHIBIT 4-2

FOOTNOTES ON EXHIBIT 4-1

a. Data from several Community Care Organization projects.

b. Weissert, William G., "Costs of Adult Day Care: A Comparison to Nursing Homes," Inquiry, March 1978, XV(1): 10-19.

c. Special Committee on Aging, Alternatives to Nursing Home Care: A Proposal with Discussion of Deficiencies in Federally-Assisted Programs for Treatment of Long-Term Disability, October 1971, prepared for use by the Special Committee on Aging, United States Senate by the Levinson Gerontological Policy Institute.

d. Service varies from one meal a day, five days a week to a maximum of three meals per day, seven days a week.

e. Colorado Department of Social Services, Fiscal Year 1977.

1. Data provided by Montana SRS, Dec. 1979 and March 1980 and HUD Regional Office.

2. Interview with Wisconsin CCO Project Director on September 12, 1979.

3. Colorado Department of Social Services, 1979.

4. Unpublished data based on 10 clients, 1977-1978 data.

5. Data provided by Community Homemakers, Inc. (Denver), 1979.

6. Volunteers of America (Colorado), 1979.

7. Volunteers of America and Colorado Department of Social Services, respectively, 1979.

8. Colorado Division of Housing, 1979.

9. Colorado Urban Mass Transit Administration, 1979.

10. Facility operators contacted directly, June 1979.

11. Health: United States, 1978.

12. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, Urban Systems Research and Engineering, Publication No. HUD-PDR-198-2, Evaluation of the Effectiveness of Congregate Housing for the Elderly, December 1976.

13. National Center for Health Services Research, Effects and Costs of Day Care and Homemaker Services for the Chronically Ill: A Randomized Experiment, William G. Weissert, 1979.

14. Congressional Budget Office, U.S. Congress, Long-Term Care: Actuarial Cost Estimates, August 1977.

15. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, Urban Systems Research and Engineering, Publication No. HUD-PDR-198-2, Evaluation of the Effectiveness of Congregate Housing for the Elderly, December 1976.

16. Access Reports: County Report for August 1979 and Access Monthly Activities Report for July 1979.

4.2.5. Interpretation of Adjusted Montana Cost Estimates

Of the adjusted Montana cost estimates presented in Exhibit 4-1, those for adult day care and personal care facilities are probably the least reliable. These estimates are based on a limited amount of information and have no comparable counterpart currently operational in Montana. While the meals, counseling, repair, information/referral, outreach, transportation, and assessment costs are generally small per unit of service and primarily based on Montana data; it may be less important to consider these individual costs than to look at the CCO cost data which encompasses all of these non medical services under one coordinated program.

The cost of adult day care reported in the literature is very high. This is due to several important factors. Transportation costs to bring the patient to and from the adult day care program are a significant part of the program cost. Professional and support staff are paid for an eight-hour workday, but actually experience something closer to a patient contact day of six hours, due to the time requirements of transporting patients to and from the program. The literature also reports that there are significant administrative costs associated with these programs which are relatively fixed. Therefore, very large programs or programs that share administrative costs with complementary service delivery programs are likely to be more efficient than those described in the literature. Since it is unlikely that any one community in Montana is large enough to support a very large adult day care program, the only reasonable approach to keeping the cost (primarily administrative cost) low for this alternative is to establish adult day care programs as joint programs with complementary providers; e.g., hospitals and nursing homes. Such joint programs have the potential for sharing administrative costs and some other services, such as meals. The literature indicates that independent small scale adult day care programs are very expensive.

4.3. VOLUME ESTIMATES

The second column of Exhibit 4-1 depicts the unit volume estimates for each service. Unit volumes vary considerably and in some cases are difficult to project on the basis of units of service per person per year. This projection is difficult because service is not always required for an entire

year or at the same level. A frequent error made in comparing nursing home costs to the costs of alternative programs is the assumption that a person placed in a nursing home will stay there for the entire year; whereas, placement in the alternative program will be temporary or on an intermittent basis. While it is true that some patients placed in nursing homes remain there until death, many do not and it may be that those who are the most likely candidates for alternative care programs are the ones that would not be permanently placed in a nursing home.

The volume requirements presented in Exhibit 4-1 are for those individuals actively receiving a service. Some services are used only on an as needed basis. Counseling, information/referral, outreach, transportation, and repair fall into this category. Repair is used infrequently, but generally is expensive. Assessment and many of the counseling and outreach services are likely to be used more intensely at the beginning of an alternative care program. The unit volume rates presented in Exhibit 4-1 can be utilized together with the survey and population demographic data to project units of service per geographic area for each alternative. This is possible since the survey data establish at one point in time the proportion of the elderly population who would utilize an alternative if it was available. Assuming that that proportion remains constant over time, annual volume projections can be made. These regional alternative projections are presented in Chapter 3. Nursing home bed projections, with and without alternatives, are presented in Section 4.4.

4.4. USE OF COST AND VOLUME ESTIMATES IN THIS STUDY

The GFRS survey being utilized in this study is ideally suited to project the proportion of the elderly population who would utilize nursing home and alternative care programs, if they are available. If data had been available at the county level to estimate the population aged 65-74 and 75 and older by sex, then this information would have been used for the population projection base. In its absence, projected demand in this study is based on the estimated county population age 65 and over.

Estimates, by Region, of nursing home bed requirements and alternatives, are given in Exhibits 4-3 and 4-4. Exhibit 4-3 summarizes these projections, with detailed Region nursing home calculations presented in Exhibit 4-4.

The assumptions used in preparing the estimates in Exhibit 4-3 and 4-4 are presented in Exhibit 4-5. It is essential to consider these assumptions in interpreting the projections in Exhibits 4-3 and 4-4. Alternatives within the context of this report are the channeling long-term care programs, community based (CCO) long-term care programs, and similar multi-service organized alternatives to nursing home care programs which include a case management function.

Exhibit 4-3 presents a summary of nursing home bed and alternative volume estimates by Region and for the state of Montana. Column one of Exhibit 4-3 presents the number of nursing home beds in 1979, based upon information provided by the Montana Department of Health and Environmental Scineces. The second and third columns present the low and high estimates for additional (surplus) nursing home beds in each Region. The detailed methodology for these calculations is presented in Exhibit 4-4. The fourth column presents the range between high and low estimates, which establishes an upper bound on the number of alternative program candidates. There are other useful interpretations from Exhibit 4-3. Since each low estimate indicates a surplus, the high estimate is probably a more realistic upper bound on the number of alternative program candidates in each Region (additional placements after all nursing home beds are occupied at 90%). This number exceeds 10,000 for the state of Montana. Of course, as was discussed in Chapter 3, not everyone whose functional ability score indicates nursing home or alternative placement would choose to do so, including those cases where families are able to provide an acceptable alternative with their own resources.

There are two major differences between the estimates of alternative program volumes presented in Chapter 3 and those presented in Chapter 4. The Chapter 3 estimates attempt to include the fact that not everyone projected for nursing home or alternative candidate will choose that placement. The Chapter 4 estimates attempt to account for the current regional surplus or deficit of nursing home bed availability. One additional finding of interest is that in the rural area of Region 4, both the high and low estimates indicate a surplus of nursing home beds.

Exhibit 4-4 illustrates the details of the calculations utilized to estimate the unmet demand (surplus) of nursing home beds. Each of the columns

is headed by a number in parentheses, in order that it can be referenced within the calculation illustration in some of the column headings. Column one is the number of nursing home beds for 1979, based on data provided by the Montana Department of Health and Environmental Sciences. The second column estimates the average number of beds occupied in 1979, based on the same data source. Column three presents the high and low estimates of bed surplus. The high estimate is beds available multiplied by .9 (to indicate an average 90% occupancy) and then subtracting the beds occupied (column 2). The low estimate is calculated by subtracting the nursing home beds occupied from the available nursing home beds. The notations high and low estimates here refer to projected demand for additional beds, not the bed surplus. The fourth column presents the nursing home discharges for 1979, based on data from the Montana Department of Health and Environmental Sciences. The fifth column is the projected demand estimates for nursing home care based on the GFRS. The high estimate is the projected population scoring below 40 on the GFRS divided by .9 to indicate a 90% occupancy in nursing homes. The low estimate is based on the projected population scoring below 20. The nursing home bed unmet demand is presented in column 6, by subtracting the bed surplus (column 3) and the nursing home discharges (column 4) from the projected demand (column 5). There are a number of assumptions implied by this methodology, which are listed in Exhibit 4-5. The availability of more information which could be utilized to better define some of these assumptions, could result in narrowing the range of the high and low estimates.

Based upon available data, it would be inappropriate to conclude that significant numbers of additional nursing home beds are required in Montana in 1980. In 1976, Montana had 68.8 nursing home beds per 1000 resident population over 65, as compared to 61.3 for the United States and 56.5 for the Mountain Region. Demographic characteristics and availability of alternatives are important factors in evaluating these differences.

EXHIBIT 4-3

SUMMARY OF NURSING HOME BED AND ALTERNATIVE VOLUMES BY REGION*

REGION	NUMBER OF BEDS 1979	ESTIMATED ADDITIONAL NURSING HOME BEDS** LOW	HIGH	RANGE BETWEEN HIGH AND LOW, ESTIMATED MAXIMUM NUMBER OF ALTERNATIVE CANDIDATES
1.	849	(509)	684	1193
2. Rural	541	(223)	1607	1830
2. Urban	529	(56)	1743	1799
3. Rural	669	(32)	1556	1588
3. Urban	528	(375)	773	1148
4. Rural	920	(976)	(1)	975
4. Urban	510	326	2751	2425
5. Rural	547	(200)	1066	1266
5. Urban	747	(635)	250	885
State of Montana	5840	(2680)	10,429	13,109

* See Exhibit 4-5 for assumptions.

** Assumes everyone scoring below 40 on GFRS uses a nursing home or alternative. While the best estimates of the proportion of the GFRS below 40 who are placed in nursing homes and utilize alternatives require future research, it is clear that the requirements will fall within the range and not at the extreme points. Also see the assumptions in Exhibit 4-5. Numbers in parentheses indicate a current surplus.

EXHIBIT 4-4

ESTIMATED ADDITIONAL NURSING HOME BED REQUIREMENTS BY REGION *

REGION	(1) NUMBER OF N.H. BEDS, 1979	(2) N.H. BEDS OCCUPIED, 1979	(3) BED SURPLUS HIGH EST.: (1)x.9-(2) LOW EST.: (1)-(2)	(4) N.H. DISCHARGES, 1979	(5) PROJECTED DEMAND HIGH: GERS BELOW 40÷.9 LOW: GERS BELOW 20	(6) N.H. BED UNMET DEMAND (SURPLUS) (5)-(4)-(3)
1.	849	691	HIGH: 73 LOW: 158	586	HIGH: 1343 LOW: 235	HIGH: 684 LOW: (509)
2. Rural	541	488	HIGH: (1) LOW: 53	440	HIGH: 2046 LOW: 270	HIGH: 1607 LOW: (223)
2. Urban	529	497	HIGH: 21 LOW: 32	580	HIGH: 2344 LOW: 556	HIGH: 1743 LOW: (56)
3. Rural	669	632	HIGH: (30) LOW: 37	420	HIGH: 1946 LOW: 425	HIGH: 1556 LOW: (32)
3. Urban	528	500	HIGH: (25) LOW: 28	526	HIGH: 1274 LOW: 179	HIGH: 771 LOW: (375)
4. Rural	920	806	HIGH: 22 LOW: 114	866	HIGH: 887 LOW: 4	HIGH: (1) LOW: (976)
4. Urban	510	470	HIGH: (11) LOW: 40	539	HIGH: 3279 LOW: 905	HIGH: 2751 LOW: 326
5. Rural	547	492	HIGH: 0 LOW: 55	456	HIGH: 1522 LOW: 311	HIGH: 1066 LOW: (200)
5. Urban	747	690	HIGH: (18) LOW: 57	587	HIGH: 819 LOW: 9	HIGH: 250 LOW: (635)

* See Exhibit 4-5 for assumptions

EXHIBIT 4-5

CRITICAL ASSUMPTIONS USED IN ESTIMATING NURSING HOME BED AND ALTERNATIVE VOLUMES

1. The over 65 Montana population will not change significantly in the proportion over 75 or in the distribution of males and females.

2. The GFRS is a valid, reliable instrument of prediction when used with non-institutionalized populations and institutionalized populations of elderly.

3. Nursing home and alternative projections are for the elderly only. They do not include the physically disabled and other groups under age 65 who utilize nursing homes and alternatives.

4. Daily idiosyncrasies in the attitude, health status, and mental status of respondents does not bias the survey results.

5. The cut off scores used in the GFRS are valid for institutionalized and non-institutionalized elderly.

6. The projections on the use of alternatives assumes that these alternatives are available in adequate quantity and are locally accessible to the population requiring them. Accessibility includes physical location, transportation, financial, and information access.

7. There are an appropriate number of nursing home beds available within each of the geographic regions utilized, thereby resulting in insignificant utilization across regional boundaries as they have been defined for this study.

8. People will always make use of appropriate services rather than a higher level of service, a lower level of service, or no service at all.

9. Mortality is ignored for the non-nursing home population. That is, some of the non-institutionalized population projected for nursing home or alternative care may die prior to being admitted to these services.

10. Utilization and discharge data provided by the Montana Department of Health and Environmental Sciences for 1979 is a reasonable representation of near future nursing home utilization and discharge performance.

11. Occupancy rates of nursing homes, on the average, will be about 90%.

EXHIBIT 4-5, continued

CRITICAL ASSUMPTIONS USED IN ESTIMATING NURSING HOME BED AND ALTERNATIVE VOLUMES

12. Medicaid non-user elderly have been grouped with the non-Medicaid elderly population for projection purposes.

13. The nursing home utilization characteristics of non-nursing home survey respondents with a GFRS score less than 40 are similar to those discharged from Montana nursing homes in 1979. That is, the length of stay, mortality rate, and resource requirements would be similar.

14. The HUD non-Medicaid elderly population represents the Montana non-Medicaid elderly population.

15. The estimates in Exhibits 4-3 and 4-4 assume that every person projected as needing nursing home or alternative long-term care will seek out and receive this care. Some will choose not to, others will not be aware of their need and the opportunities, and some will die prior to admission to a long-term care program. The Grauer and Birnbom study validated the GFRS based on an outcome of institutionalization or death within eighteen months. Their limited sample yielded a 25% death rate for those who scored 19 and under, but there is no indication of what proportion might have been institutionalized prior to death.

5. INFORMATION SOURCES

5.1. OPERATIONAL ALTERNATIVE PROJECTS

Most of the relevant operational alternative care projects are demonstration projects under federal programs which include Medicaid 1115 waivers from the Department of Health and Human Services. The comments in this section are based on the literature and information obtained from personal visits to the ACCESS Project in Rochester, New York, the Wisconsin Community Care Organization Project and the Colorado Community Care Organization Project. During the course of the study, requests were made to site visit the Georgia Community Care Organization Project and Triage in Connecticut; however, these two projects could not find a convenient time for these site visits over a six-to-nine month period.

5.1.1. ACCESS

After thirty months of planning, ACCESS began serving clients in December, 1977. The geographic area served is Monroe County, New York which includes the City of Rochester. There are many unique administrative and operational characteristics associated with this project. It is organized as a nonprofit corporation separate from county government. A special law was required by the New York State Legislature in order to allow this project to operate. The Project Director has a Ph.D. and is skilled in research and economic analysis, as well as project administration. Private pay and Medicaid recipients can utilize the project's assessment and case management services. All nursing home admission requests are reviewed by the project prior to an admission. Monroe County has a very high private health insurance penetration with significant home health benefits since the Rochester Blue Cross plan was the first one in the country to include this benefit. One of the potential cost savings to the Medicaid program from this project is the provision of alternatives to nursing home care for the private pay elderly in order to free up needed nursing home beds for hospitalized Medicaid patients. The Monroe County area has a relatively low availability of nursing home beds, and frequently Medicaid recipients who can be discharged to nursing home care from

hospital inpatient care cannot be placed because of lack of available nursing home beds.

ACCESS staff indicate that very few of the alternative program recipients come to ACCESS from nursing home placement. The vast majority of their clients come from community (home) or hospital placements. The Monroe County Department of Social Services has given ACCESS authority to certify the medical necessity and approved payment for skilled and intermediate level nursing home care for all Medicaid recipients, certify the medical necessity for nursing home care for all private pay residents who apply for Medicaid coverage after nursing home admission, certify all changes in levels of care including discharges to the community for all Medicaid recipients residing in nursing homes, and certify the medical necessity and approve payments for a community-based long-term care services to Medicaid clients. ACCESS does not provide any services directly. Services are provided by for-profit and not-for-profit community organizations. During the first twenty months, more than 5,000 individuals were referred to ACCESS, with about 50% each of them coming from hospitals and from the community. One of the preliminary findings of this project is that they appear to be more successful at maintaining Medicaid recipients at home than private pay recipients at home as an alternative. A possible explanation for this finding is that Medicaid reimburses for a comprehensive array of noninstitutionalized long-term care services for its clients participating in ACCESS, whereas private pay clients must pay out of pocket for many of these services. A three-year evaluation of the demonstration project by an independent contractor will be completed in 1981. Project administration stresses the need to spend more than a year in carefully planning project implementation and operation.

5.1.2. Wisconsin CCO

The Wisconsion Community Care Organization (CCO) is a demonstration project funded through the cooperation of the W. K. Kellogg Foundation and the United States Department of Health and Human Services. The project has been operational in three sites: La Crosse County, Milwaukee County, and Barron County. The Barron County site is in a rural area of Wisconsin approximately one hour's drive north of Eau Claire. The project is administered by the State Government, originally in the Office of the Lieutenant Governor and now in the Department of Health and Social Services. Each of

the three operational sites is locally controlled and administered. It took approximately one year to plan and implement each of the three local sites. A project evaluation was completed in April, 1980 which included a comparison of a matched control group of Medicaid recipients to those utilizing the demonstration project services. All of the project sites utilized the Geriatric Functional Rating Scale as a screening instrument.

The Barron County site is of particular interest because of its rural location. It is administratively located within Barron County Government, within the Department of Social Services. The CCO Project Director has the title of Supervisor and is a temporary employee within County Government. The placement of this project within a county department and the temporary nature of employee's status has provided some constraints on the operation of the project. In September, 1979 the Barron County site had an active client caseload of approximately 160. A significant proportion of the clients are disabled. This site does its own screening and assessment, but contracts with service provider organizations to provide case management. Case management responsibility is placed with the agency that provides the majority of services for a particular client. This arrangement does have the potential to ensure that the client receives services from the case management agency and may or may not impact the receipt of services from other agencies.

There is a special service review committee which meets periodically to approve requests for unusual services. A particular case was mentioned where an elderly dairy farmer required cataract surgery. If he did not have the surgery, he eventually would have to give up his livelihood and go on welfare. However, unless he could get someone to watch his dairy cows while he was in the hospital, he would have to sell his herd and would also eventually go on welfare. The CCO project was able to provide the service of "cow sitting" while he was in the hospital with the surgery. Flexibility in providing worthwhile services of this type is a desirable attribute of alternative long-term care projects.

The Barron County staff felt that a research person was needed on their staff, preferably full time. They also felt a need for financial skills, even though the County was handling payroll and accounting procedures. They also felt that a responsible, professional organization posture was required to successfully perform the screening, assessment, and case management

activity. In summary, the local staff felt that there was a need for in-house research, financial, and senior administrative skills. It was not sufficient to just have these resources available through the state government, county government, and contract evaluator, which in the case of the state government and evaluator components were located several hundred miles away in Madison.

There is no gate keeping component to this project; that is there is no organized screening of nursing home admission requests. Organized public relations campaigns and familiarity with the program by Visiting Nurse and other providers are relied on to provide client access.

In the La Crosse and Milwaukee sites, which were not visited by JRB staff, new organizations were created to administer the project. At the La Crosse site, which was the first one operational, an independent review panel examined a sample of clients and concluded that 73% of the Medicaid and 77% of the private pay clients were not considered in imminent danger of institutionalization. Based upon this finding, the Geriatric Functional Rating Scale was utilized at the site to predict the likelihood of institutionalization. Barron County originally accepted applicants with GFRS scores below 40 and later changed the score criterion to 20. Milwaukee has been operating with a goal of having 70% of the clients with a GFRS score below 20.

The evaluation of this project attempted to conduct a cost analysis by comparing CCO clients to matched control Medicaid recipients. The comparison shows that for the La Crosse CCO clients, the mean monthly cost is $189.45 for all medical assistance costs (sample size of 156). The Eau Claire control group (sample size of 83) has a mean monthly medical assistance cost of $150.19. However, the evaluators also indicate that both hospital and nursing home use is lower for the La Crosse population than for the Eau Claire control group. The evaluators point out "all things being equal, the same medical care costs more in La Crosse than in Eau Claire". Unfortunately, the evaluators did not calculate the cost of providing the services utilized by the Eau Claire control group at La Cross prices. Without this calculation, it is clear that utilization is lower for institutional care for the CCO clients, but a true cost comparison cannot be made. Ideally, control groups for research demonstrations should be drawn from the same geographic area or an adjacent area with comparable demographic and economic characteristics.

5.1.3. Triage

The Triage Project is located in Central Connecticut, around the area of Plainville, Connecticut. It is organized as a nonprofit corporation which was incorporated on July 1, 1975. Project funding is a cooperative effort between the State of Connecticut with current funding through the Department of Aging and the Federal Government with funding through the National Center for Health Services Research and the Health Care Financing Administration of the Department of Health and Human Services. The population served includes people over age 65, regardless of income, and those 60 years of age and over who are receiving Medicare disability benefits. From March 1, 1974 to November 15, 1978, 2,128 clients have been assessed by seven nurse-clinician/social service coordinator teams. Total referrals to Triage in that time period numbered 4,439.

The project makes available nontraditional services, such as nutrition (meals-on-wheels), taxi support, etc. These benefits became available on August 8, 1975 when Triage received comprehensive waivers for the use of Medicare Trust Funds, which were not to benefit more than 3,000 Triage clients. The waivers include the deductibles and coinsurance for Medicare, restrictions on the receipt of home health care including three day prior hospitalization and the 100 visit limit, and other similar restrictions. Prescription drugs, which are not a benefit under Medicare, were reimbursed under these waivers. This latter component required that Triage perform a fiscal agent activity for drug claims.

The average age of Triage clients is 76.9 years. Fifty-eight per cent of the population is 75 or older. Triage has 198 contracts with various service providers. There is an independent evaluation component of the Triage project. An experimental group of 307 Triage clients and a comparison group of 195 elderly from another part of Connecticut are being tracked for the evaluation. The two groups were selected over the same time period (August 1976--January 1977) and were matched on the basis of four factors: age, sex, marital status, and high or low risk of deteriorating health status. Results of this analysis are not yet available. However, Triage staff estimate that a total of 81,275 institutional days were saved in fiscal year 1978, with 61,320 days saved through prevented admissions and 19,955 days saved through delayed admissions. After taking into account Triage costs per client, the net dollars saved is

estimated at $1,688,329. These saved institutional days and dollar estimates are based on staff analysis, not the conclusions of an independent evaluator.

5.1.4. Swing-Beds in Rural Hospitals

Long-term care swing-bed experiments in rural hospitals have been conducted in Iowa, South Dakota, Texas, and Utah. In April, 1980, the North Dakota Hospital Association began a similar demonstration. The primary purpose of these programs is to provide temporary nursing home bed placement within the local community in the hospital setting when local nursing home beds are temporarily unavailable. The goal of these programs is to avoid nursing home placement in a distant community because there is a temporary unavailability of nursing home beds in a rural community. Therefore, the swing-bed experiments are not designed to provide alternatives to nursing home care, but rather to provide nursing home care in an alternative institutional setting on a temporary basis.

5.1.5. Georgia Alternative Health Services Project

The Georgia Alternative Health Services Project is demonstrating the health impact of three alternatives to nursing home care, with funding provided through Section 1115 of the Social Security Act waivers. The three services being tested include: home delivered services, alternative living services, and adult day rehabilitation. The project serves clients in a seventeen county demonstration area. All clients are Medicaid eligible, over age 50, and either reside in a nursing home or meet the Medicaid program's eligibility requirements for nursing home care. The project began in June, 1976 and after approximately one year of planning began to serve clients. The project services were scheduled to be terminated in June, 1980.

5.1.6. Colorado CCO

In July, 1977, the Colorado Department of Social Services received funding for a Community Care Organization (CCO) Demonstration Project. Boulder County, Colorado was chosen as the geographic service area for this project. Local administration of the project was place within county government, as a separate function reporting directly to the County Commissioners. In many respects, this organizational arrangement gave it equal status with other

county departments. The Colorado Department of Social Services, within the Medical Assistance Division, administered the state aspects of the project. Although the project began client screening, assessment, and case management relatively quickly, other aspects of the project did not meet federal expectations. During its brief two-year history, the project had two different Principal Investigators as independent evaluators and client loads did not reach federal expectations. After approximately eighteen months, phase out of the project began with termination occurring in June, 1979.

Premature termination of the project resulted from many factors. The Federal Government and some State Government officials believed that the evaluation design was not adequate, in part because no matched control group was included. Federal officials expressed concern that the goals and objectives of the project were not clearly articulated, nor was there a clear definition of responsibility and authority between the state and local components. After approximately one year of operation, the active client level had reached 114 cases, which were being managed by three case management teams. A goal of 200 active clients at the end of the second year had been established. The decision to terminate the project was made by the Federal Government.

5.2. RELEVANT LITERATURE

The scope of the literature reviewed for this study is wide, and the potential sources of information are numerous. This topic is one that is under continuous study at the national and local levels at this time. Several different tactics were utilized to identify and obtain the literature in this field. The more significant studies are presented as annotations in this section. A complete bibliography of literature reviewed is presented in Section 5.3. Literature of interest in this study includes: survey methodology, operational alternative projects, nursing home cost and utilization, and testimony before Congressional committees.

Bell, Bill D. "Mobile Medical Care to the Elderly: An Evaluation." The Gerontologist, April 1975, 15(2): 100-103.

The author describes and evaluates a statewide, mobile health care program, aimed at older rural persons in Arkansas, called Multiphasic Examinations to Reduce Chronic Illnesses (MERCI). About 13% of Arkansas' population is over 65; nearly half of them fall below poverty level, and 50% live in rural areas. Medical facilities are not spread evenly throughout the state, and most counties lack a physician. The greatest barriers to health care are, in order, finances, transportation and accessability.

The MERCI project has a converted school bus, funded totally from State and Federal sources, staffed by seven persons. This unit travels to areas at least twenty miles from a physician to screen residents over 60 for specific chronic illnesses. In its first six months of operation (September 1973 - March 1974) the unit screened 2,738 persons (95.3% over 60, 42.7% men, 66.8% white and 76.4% with annual incomes below $3,000). Test results showed high incidences of hypertension (31%), heart trouble (22%) and eye problems (17%). Because of the manner of media exposure chosen (newspapers, radios, posters, etc.), it is felt that blacks were not as aware of the availability of MERCI as whites. The author felt that the weakest aspect of MERCI was the referral process: patients were relied upon to consult a physician if told to. Evaluation of the referral system is not made.

The cost per patient was $16, deemed high by the author. The acronym "MERCI" was also thought to paint a negative picture in the public's eye. But in general, Bell stated, " . . . an adjunct medical system such as this contributes significantly to the . . health . . of an elderly population."

Bell, William G. "Community Care for the Elderly: An Alternative to Institutionalization." The Gerontologist, Autumn, 1973, Part I, 13: 349-354.

Prepared at the request of the Florida Dept. of Health and Rehabilitative Services, this study focused on Medicaid-supported elderly admittees to all licensed nursing homes in Hillsborough County during September, 1970, and a comparable group of functionally impaired elderly residing at home drawing Old Age Assistance (OAA). These groups were chosen due to their associated high costs, medical vulnerability, and lack of adequate spokespeople.

The author first reviewed two policy issues related to care for the elderly: economic (as many as 30% of the institutionalized elderly were judged by a panel of "experts" to be inappropriately placed and there was a disproportionate percentage of OAA recipients in nursing homes. Therefore, continued allocation of resources for sustained institutional expansion without consideration of alternate measures is "subject to question") and personal preference (85% of the sampled low income elderly preferred to live at home whether or not living there when asked; the literature suggests negative effects of nursing home life).

He then proposes a community care program, incorporating in a single public agency health maintenance, help with housekeeping and shopping, mobile meals, transportation to essential services and counseling (crisis intervention) advocacy. These components were selected because of indications for such in the literature; their necessity for normal daily living; low costs when compared to nursing home placement; urban availability, or at least ease in establishment of these services; and potential of the program to free a family member to join or return to the workforce.

Berg, Robert, et al. "Assessing the Health Care Needs of the Aged," Health Services Research, Spring 1970, 5(1): 36-59.

During the early 1960's the author directed personal interviews of institutionalized and non-institutionalized elderly in Monroe County, New York. Over a six month period, a physician/public health nurse team conducted interviews of 349 elderly individuals of all income levels, selected at random. The survey was designed to assess the respondent's need for either mental or physical care or both. The amounts of medical and mental care supervision required by the respondents were then tabulated to yield an estimate of their needs for various levels of care. Berg concluded that 6.7 percent of the elderly population would be optimally served by a public home health nursing agency.

Branch, Laurence G. Understanding the Health and Social Service Needs of People Over 65. Center for Survey Research, University of Massachusetts, 1977.

The author surveyed the health care needs of the non-instutionalized elderly and disabled in the State of Massachusetts.

The sampling frame consisted of 2,000 Massachusetts households comprised of high users of medical services, the elderly and the disabled. Between November, 1974 and February, 1975, 1,625 elderly and 386 disabled persons were interviewed about their needs for medical, social and homemaker services. Follow-up interviews were conducted fifteen months later with only the elderly, to determine the extent to which these needs had been met. Branch reports his results in four categories ranging from "need currently met with no apparent problem," to "need currently unmet with a current problem."

Branch found that seven percent of the sampled elderly had unmet needs for transportation, four percent for housekeeping, four percent for food shopping, .5 percent for food preparation, six percent for socializing and three percent for personal care assistance.

Brickner, Philip W. Home Health Care for the Aged: How to Help Older People Stay in Their Own Homes and Out of Institutions. New York: Appleton-Century-Crofts, 1978.

This book describes a New York City hospital based alternative to nursing home care program. The descriptive materials include: how to establish a program, the role of each professional provider in the alternative home care program, and a discussion of the financial basis for a program including how to fund a program. Time study analyses were conducted to provide the cost estimates of the alternative care program. The author correctly points out inappropriate placement in nursing homes adds further to the cost for nursing home care which is usually ignored in most cost comparisons (and that overbuilding of nursing homes for profit in some parts of the country has resulted in a concentrated effort to fill the unneeded beds).

The nursing home cost estimates reported for comparison purposes in this study are based upon physician estimates of the number of nursing hours required for 23 selected program patients and then extrapolated from a regression analysis of 23 nursing homes. They are not based on a matched control group. The project program costs are based upon 23 of 29 patients. It was not indicated in the report if these patients were selected at random, but 6 were rejected by the physician panel for consideration of the cost comparison since they were not candidates for nursing home care. It is curious that the author indicates a concern for inappropriate placement of nursing home patients which would further inflate the cost per patient for nursing home care, while not considering the same factor in the hospital based home health care program. In any case, the cost comparisons are based upon estimation techniques rather than controlled comparisons, the number of observations is extremely small and only nursing home and alternative care program costs are included (other medical costs are not included).

Brickner, Philip W., James F. Janeski, Sister Teresita Duque. "Hospital Home Health Care Program Aids Isolated Homebound Elderly." Hospitals, November 1, 1976, 50: 117-122.

In January 1973, the Chelsea Village Program was started to meet the health case needs of the isolated, homebound elderly living in the Chelsea and Greenwich Village areas surrounding St. Vincent's Hospital. This area in Manhattan is one of the few remaining "melting pot" areas of the city, and it houses roughly 175,000 people. Approximately 14 percent, or 24,500 individuals, are over age 65, as compared with 10 percent nationally. The number of individuals who need home health services is estimated to be about 3,000.

During the first three and one-half years that the program has been in operation, 414 persons were referred to the program, and 2,900 home visits were made. There were 262 women and 152 men participating in the program. Eight percent of the patients are under age 60. These younger people suffer from mental retardation or chronic neurological or psychiatric disorders.

The present reimbursement rate for nursing homes in New York City averages $14,000 per year. Home health care for semi-ambulatory patients is about half as expensive as the cost of nursing home care. A conservative estimate indicates that during a 12-month period of the program, 70 patients were maintained at home who otherwise would be nursing home candidates. A savings of approximately $500,000 is therefore generated by this one program alone.

Brickner, Philip W., et al. "The Homebound Aged: A Medically Unreached Group," Annals of Internal Medicine, January 1975, 82(1): 1-6.

The Chelsea Village Program began in January 1973 to meet the health-assistance needs of aged, homebound, isolated residents of the Chelsea and Greenwich Village areas of Manhattan surrounding St. Vincent's Hospital. The aims of the program are to keep patients in their community, out of institutions, in adequate housing, in the best possible state of health, and at the maximum level of independence. Local organizations and community residents serve as case-finders; home delivery of a broad range of services is carried out by St. Vincent physicians, a nurse, social workers, a driver (with van) and a coordinator. The program coordinates with Visiting Nurses, meals-on-wheels, a homemaker assistance agency and others to supply CVP patients with extra services. In the first 16 months of operation, 200 referrals and 620 visits were made. The average age of CVP patients was 80; 40% had medical disorders, 24% bone/joint problems, 17% psychiatric disorders and 11% neurological diseases. Three-fourths of the referrals were from community agencies, one-fourth from St. Vincent's. Nineteen patients have improved to the extent that they are no longer housebound; 104 remain stabilized under CVP care at home (of these, Brickner et al estimate that 85 could have required institutionalization were it not for the program). Program problems include poor case finding, lack of cooperation by other physicians who may be treating the patient, lack of volunteers, and lack of money for adequate staffing.

Annual cost of the program is only $35,000, due to the fact that the professional staff volunteers its time, and private agencies fund the non-professional salaries and van expenses. The authors estimate (with some reservations) savings to the community at $340,000 per year.

Benefits of the program, other than financial as already mentioned, are an enhanced relationship between hospital and community, and assistance to a truly medically-unreached group of people.

Brody, Stanley J. "Comprehensive Health Care for the Elderly: An Analysis," The Gerontologist, Winter 1973, 13: 412-417.

Presented originally as a paper to the Gerontological Society in 1971, this article begins with a broad overview of the traditional medical emphasis on the quantity rather than the quality of life. Brody asserts that a truly comprehensive system of health care must take into account a broader view of the patient and his needs, and thus must move from the usual hospital focus to a community base. In particular, the elderly, with high rates of chronic illness (81%), mental impairment (as high as 25%), and difficulty in performing such simple tasks as walking down stairs (30%), require a care delivery system that provides not only medical and health resources, but also support services that would enable them to utilize those resources (e.g., transportation). Brody outlines three types of "insults" to the aging process: mental, physical and environmental (i.e., fear of assault, forced to live in "bad" neighborhoods due to low income, lack of information, etc.). He mentions five "health-social" services which are essential to the continuum of care for the aged: personal hygiene, supportive or extended medical care, maintenance (including housekeeping and meals), counseling and linkages (education, outreach, referral, etc.).

Brody goes on to assess Medicare coverage as well as some of the sixteen proposed programs before Congress at the time, regarding their handling of health-social services. Medicare would not cover more than 100 incidents of home health care, and even those must be provided by an agency that meets several stringent criteria. Of the 20 million subscribers in 1969, less than 3% were reimbursed for home health services. Paradoxically, unless the patient is ill enough to require institutionalization, he cannot receive the identical services in his own home. Under the Javits proposal, contracts with "comprehensive health services systems" are authorized. The Nixon, HIAA, and Long proposals did not extend coverage beyond Medicare standards. The AMA proposed an even stricter bill, equating health care with medical and in-patient care only. Somewhat more liberal was the Kennedy-Griffith proposal, which included transportation services, physiotherapy, nutrition, social work and health education when performed by Health Security Board certified agencies. The author found the best plan to be that suggested by Ameriplan, which would assure home health care coverage, including part-time nursing care, home health aides, social service, and speech, physical, or occupational therapy.

The author concludes that if the current disease-oriented approach in the U.S. continues, the needs of the elderly will not be met, and legislation must reflect these needs by way of a comprehensive health care system.

Colt, Avery M., et al. "Home Health Care is Good Economics," Nursing Outlook, October 1977, 25(10): 632-636.

This study is based on two populations in Rhode Island, one consisting of 50 records selected at random from a population of elderly who have exhausted their Medicare benefits and are in a special home health care program as an alternative to insitutionalization, and a second group of 50 from a Rhode Island low-income group with a home health care program not specifically designed to prevent institutionalization. Two significant criticisms of the study are that of the 50 randomly selected from the first group two records were dropped from further consideration although the reason for this was not specified. (Dropping the two highest utilizers of services from a sample of 50 can drastically effect the cost results of the study; also, the second (comparison) group was not a group matched for demographic and other characteristics.)

Average cost per patient enrolled day was reported to be $5.15 in the first group (which only includes the home maintenance service cost of care). An enrollment day is different from a service day.

In the cost comparison section of the paper, which compares home maintenance costs to cost of institutional facilities, the medical care component of the Consumer Price Index was used to make the two-year adjustment. There is a statement which says that the home maintenance program saved Medicare and State Medical Assistance programs $855 in insitutional care charges per enrollee in the total sample year, but this statement cannot be tracked from the data presented in the paper. In addition, when the savings is multiplied by $100, the authors indicate that the saving totals out to $8,500 per year which indicates that either this number is off by a factor of 10, or the $855 number is ten times too high. The cost comparisons do not include any information about other government supported health care services received by the patients in either population, including physician, pharmacy, hospitalization, and other medical services. Although the authors conclude that "costs of home maintenance were significantly lower than costs of alternate institutionalization in both study samples," this conclusion is not supported by the data presented in this paper, and does not take into account all of the medical and public and private support costs involved by both populations.

Comptroller General of the United States, PAD-80-12, Report to the Congress: Entering a Nursing Home - Costly Implications for Medicaid and the Elderly, November 26, 1979.

A section of this report provides descriptive information about state and local long-term care demonstration projects which indicate that several project elements are needed to offset the causes of preventable nursing home use. These elements are: a gate keeping mechanism, a comprehensive needs assessment, a coordinating mechanism, a funding source, and controls over cost and utilization. Five state and local long-term care projects which are testing these elements are reviewed. These projects are located in Georgia, Monroe County New York, New York state (nine sites), Virginia, and Wisconsin. The cost comparisons for three of the projects indicate that in Wisconsin the community-based and institutional long-term care services are roughly comparable, average monthly Medicaid costs in Georgia for AHS services is $162 compared to the estimated average monthly cost to Medicaid of $500 for nursing home care, and ACCESS in Rochester, New York showed daily cost savings of 51% for skilled nursing level and 41% for health related level clients compared to comparable institutional programs. The report concludes that two key elements are required to have an impact on the flow of the elderly in nursing homes: intervene in the nursing home admissions process to screen both public and private pay applicants on the basis of a comprehensive needs assessment and package and finance the community services required to permit those who do not need or desire institutional care to remain in the community. Furthermore, a single, comprehensive financing mechanism is needed. The report also indicates that reliable projections of the need for nursing home beds cannot be made using current nursing home utilization data. Because both public and private pay patients enter nursing homes without adequate needs assessment, there is no data to support projections based on those who are in need of nursing home care. The two major recommendations of the report are to establish a preadmission screening program to serve nursing home applicants and to assign responsibility for administering the preadmission screening program to one agency.

Comptroller General of the United States, HRD-78-19, Report to the Congress: Home Health -- The Need for a National Policy to Better Provide for the Elderly, December 30, 1977.

This report is the basis for some of the GAO testimony for Congressional Committees on the cost of long-term care alternatives by changing Medicare and Medicaid. The report indicates that about 60% of the elderly who are extremely impaired live outside of institutions. These people currently receive a wide variety of in-home services such as personal care, meal preparation, nursing care, homemaker service, and continuous supervision. Other services they receive are transportation, housing, social and recreational. These are generally called "home services". Many of these services are provided by family and friends and, in general, the cost of non-institutional care for the elderly is borne in greater proportion by private funds and family services than by public financed services.

The GAO has been conducting a continuing study in Cleveland, Ohio of 1,609 individuals 65 years and older who receive services from 118 service agencies. OARS is one of the survey instruments that has been administered to this population. The study recommends that Congress consider focusing its job creation program for assisting the sick and elderly on those older people who live alone and are without family support.

Estimates are reported for the cost of eliminating various constraints on the Medicare program as follows:

- Limits on number of visits under Parts A and B — $ 12.5 million
- Skilled care requirement under Parts A and B — $1,250.0 million
- Prior hospitalization requirement under Part A — $ 12.5 million
- Homebound requirement under Parts A and B — $ 92.5 million
- Adding homemaker/chore services — $ 75.0 million

These limitations cannot be totaled since there are interactions among them.

The study also cites the difficulties in coordinating public home services. The principal federal programs providing home services are Titles XVIII, XIX, and XX of the Social Security Act and Titles III and VII of the Older Americans Act. These programs cover different services and have different eligibility criteria. The study concludes that home health care and other related home-delivered services for the elderly are not being effectively coordinated. Services are available through so many different programs that effective coordination delivery of home health and other in-home services seems close to impossible. The study recommends that HEW should promote the establishment of a comprehensive single entry system by which individuals are assessed as to their needs, prior to placement in a program.

Congressional Budget Office, U.S. Congress, Long-Term Care: Actuarial Cost Estimates, August 1977.

This study estimates the costs of three options for long-term care for the elderly and disabled: modifying existing programs that restrict the supply of non-institutional services under the current system; long-term care insurance that would eliminate financial needs as a basis for eligibility and replace much private spending with federal spending; and comprehensive long-term care grant to funnel funds through a single agency that would be responsible for providing services to needy individuals. The estimates for all three programs indicate that the implementation of any of them would be bound in the short run by the available supply of resources since current need exceeds supply. Expansion of services and response to new demand may be restrained by the capacity of present organizations for several years because of the following:

- Shortage of experienced supervisory and skilled personnel;
- Shortage of available capital;
- Delays in construction or conversion of facilities;
- Possible reluctance of some providers to grow rapidly; and
- The time required for organizations not currently involved in providing long-term care services to obtain the necessary certifications and licenses and assemble personnel.

Based upon studies in Monroe County, New York and Minneapolis, estimates were prepared on the percentage of the population over age 65 that would need the following services: skilled nursing facilities; intermediate care facilities; personal care homes and sheltered living facilities; intensive nursing at home or in sheltered living facilities; and intermediate nursing, personal care and homemaker services at home or in sheltered living facilities. All of these estimates are based in terms of fiscal 1976, have a range of percentage with a spread of two to five percent, and are cumulative percentages by level of care. For all care listed, between 16.5% and 21.5% of the elderly have some need. The ranges are at best a gross approximation of the proportion of persons who would qualify for public programs that funded all necessary services. Although there are limitations, the data are adequate to demonstrate that, with the exception of institutional nursing facilities, far more persons would qualify for benefits than there are facilities and personnel to provide them.

This study also estimates reimbursements per day for skilled nursing facilities, intermediate care facilities, and facilities for the mentally retarded for the years 1973 through 1976.

Davis, John W. and Marilyn J. Gibbin. "An Areawide Examination of Nursing Home Use, Misuse and Nonuse," American Journal of Public Health, June, 1971, 61(6): 1146-1155.

Davis and Gibbin studied 3,314 hospitalized elderly, nursing home patients, state mental hospital patients over 65, and other individuals who were in need of nursing home care but were not so placed, in a 6-county area of Western New York between 1967 and 1969. Data were collected by social workers and public health nurses, and appropriateness of placement was judged by one or two (if the first judged "inappropriate") physicians.

Current Placement	Needed Placement					
	Total	N.H.	General Hospital	Mental Hospital	Intermediate Care Facility	Other
Nursing Home	1,621	1,186 (73.2)	5	1	276	153
General Hospital	465	101	268 (57.6)	2	68	26
Mental Hospital	757	117	7	184 (24.3)	216	233
Home for Well Aged	50	11	0	0	38 (76.0)	1
Own Home	421	92	3	0	266	60 (14.3)
TOTAL	3,314	1,507	283	187	864	473

When examining the characteristics of the 1,507 needing nursing home placement, the authors found that females and older people were more often placed correctly; a higher percentage of people requiring assistance in ambulation than those who could walk independently were not in nursing homes; a far higher proportion of married persons needing nursing home care were not receiving it despite any differences in functional status; and many other indications. The authors conclude that demographic characteristics are better predictors of nursing home placement than functional status.

Possible reasons for these problems are discussed: unavailability of nursing home beds or other resources; and personal preferences of patient, family or nursing home administrator.

The implications of the study are that administrators must be willing to discharge a group of more "minimal care" cases and admit a group with greater care needs -- planners should take heed. The discharged group needs places to go, and the authors again urge planners to work appropriately towards establishing appropriate settings, such as intermediate care facilities.

Doherty, Neville and Barbara Hicks. "Cost-Effectiveness Analysis and Alternative Health Care Programs for the Elderly," (Presented at the Joint National Meeting, Operations Research Society of America and The Institute of Management Sciences, Miami Beach, Florida, November 3-5, 1976.).

The authors describe a theoretical framework for measuring effectiveness and costs of programs which are alternatives to nursing home care. Three measurement criteria are referred to: ADL (Activities of Daily Living), MSQ (Mental Status Quotient), and IADL (Instrumental Activities of Daily Living). These can be related to physical, mental, and social functioning.

Illustrations of tabular analyses are presented, but no real data is utilized. Doherty is the principal investigator for the evaluation of the Triage project in Connecticut.

Donahue, Wilma T., Marie McGuire Thompson, and D. J. Curren, Editors. Congregate Housing for Older People: An Urgent Need, a Growing Demand. Washington, D.C.: U.S. Department of Health, Education and Welfare, Office of Human Development, Administration on Aging, DHEW Publication No. (OHD) 77-20284, 1977.

This book contains selected papers from the First National Conference on Congregate Housing for Older People, conducted by the International Center for Social Gerontology which was held on November 11-12, 1975. The Conference developed a working definition of congregate housing: an assisted independent group living environment that offers the elderly who are functionally impaired or socially deprived, but otherwise in good health, the residential accommodations and support services they need to maintain or return to a semi-independent lifestyle and prevent premature or unnecessary institutionalization as they grow older.

Three papers in this publication are significant. The paper by Louis Glewicks, "An Architectural Program" (pages 73-86) describes in specific terms some of the considerations for designing and allocating space to a congregate living facility. The paper by George Thomas Beall, "Financing the Services", summarizes many of the financing programs available at the federal, state, and local levels to support residents of congregate living facilities. Finally, Penelope Hummell Pepe has prepared "An Annotated Bibliography on Congregate Housing".

This report contains no data except for some U.S. demographic information. The annotated bibliography may be the most useful chapter.

Evaluation of the Effectiveness of Congregate Housing for the Elderly, Washington, D.C.: U.S. Department of Housing and Urban Development, Publication Number HUD-PDR198-2, December 1976.

Congregate housing is characterized by: age-segregation, an integrated housing and services package, and a non-institutional environment. This study is based upon 29 congregate living sites throughout the United States and a survey of 25 residents and 10 applicants at 19 of these sites (for a total of 469 respondents). Most congregate living facilities were found to be in urban areas. There is an apparent consistency among congregate housing policies and operations: e.g., the physical design of facilities expresses the stated management policy in most cases. Common features in sites where management assumed a high degree of independence among residents were: kitchen facilities in most units, less common space per resident, and a high level of access to community services.

Approximately 90% of all residents are over the age of 70 and 63% were widowed females. Approximately 57% of all applicants are over 70 and 65% were widowed females. About 4% of residents and 13% of all applicants lived with family (children) prior to moving to congregate housing. Recently widowed homeowners sought out congregate housing, whereas widowed apartment renters did not seem to seek out this alternative immediately after the spouse's death.

Low income groups seemed to regard congregate housing as shelter, in contrast to high income groups which sought congregate housing to be close to family, for favorable climate, because of difficulty in maintaining their own home, and for health reasons. Meals, housekeeping, and on-site activities were not regarded as important features, but the availability of medical services was regarded as important in case of emergencies. As health declines, dependence on special features significantly increases; e.g., barrier-free design, ramps, handrails, tactile aids, etc. Sixty-six percent of the residents found the availability of medical services useful.

The following cost data was determined from the survey:

COST ELEMENT	LOW	HIGH
Total development and construction cost per square foot	$ 10.08	$ 45.92
Total development and construction cost per housing unit (varies by square foot per unit)	$6,236.00	$29,706.00
Annual operating costs per unit (not per resident)	$ 723.00	$11,573.00
Costs per meals served	$ 0.71	$ 2.04
Annual meals services per resident	$ 130.00	$ 339.00
Annual housekeeping per unit	$ 33.00	$ 386.00

Frohlich, Philip. "Who Are the Disabled in Institutions?," Social Security Bulletin, October 1971, 34(10): 3-9.

Table 6 in this report describes the reasons for institutionalization of institutionalized adults aged 18 to 64 for the Fall, 1967 by type of institution. This report deals exclusively with individuals under the age of 65.

For the 282,000 individuals reporting, the reasons given for institutionalization were the following:

-- Need permanent care	37.6%
-- Had to be watched and looked after more carefully	37.6%
-- Needed medical nursing care	34.0%
-- Too hard to handle at home	28.5%
-- Need special training	15.3%
-- No one to look after at home	12.1%
-- Too costly at home	7.0%
-- Other and not reported	14.2%

This data would indicate that many of the institutionalized adults under the age of 65 are placed in an institution for other than medical reasons.

Grauer, H. and F. Birnbom. "A Geriatric Functional Rating Scale to Determine the Need for Institutional Care," Journal of the American Geriatrics Society, October 1975, XXIII(10): 472-476.

This study was carried out to validate a rating scale which could serve as a guide in determining the need for institutional care. The scale assesses the subject's physical and mental disability, balanced against his ability to function and the support available from relatives and community resources. Cut-off points were tested by the use of an 18-month follow-up interval. Initially, 130 aged men and women from three different settings were rated. At the time of follow-up eighteen months later, 83 percent of the subjects who had obtained an initial score indicative of their inability to function in the community were either dead or in an institution. In contrast, 90 percent of those who obtained an initial score indicating that they were able to continue in the community, were not in an institution at the time of follow-up. The rating scale can be used not only to help decide the need for institutional care, but also to help determine the most suitable setting for the patient if placement is necessary.

Greenberg, Jay. Supportive Services: 1974 Status and Needs Survey of the Elderly, Staff paper, (Minnesota), September 1974.

In this paper the author discusses the results of the 1974 Status and Needs Survey of the Elderly in the State of Minnesota. The survey consisted of 1,500 completed interviews using statewide random cluster samples which were stratified by development regions.

Greenberg estimated that about two percent of the non-institutionalized elderly population needed some skilled nursing care. He based this estimate on an average of data showing that one percent of the elderly could not bathe themselves and that three percent were unable to walk around the house. The types of services that these elderly would require would be two hours weekly of skilled nursing supervision, ten hours of personal care services and homemaker and chore services amounting to about seven hours weekly.

In addition, Greenberg estimated that another five percent of the non-institutionalized elderly population required four hours of such personal care services as dressing and bathing and six hours of home maintenance and chore services. He estimated that an additional nine percent of the elderly required about five hours of housekeeping and chore services weekly and finally, another fifteen percent could have used chore services amounting to one half hour a week.

Griffith, John R. "A Home Care Program for a Small Community," Hospitals, Journal of the American Hospital Association, June 16, 1962, 36: 58-65, 140.

The author describes how a 75-bed hospital and a county health department in Albion, Michigan, with funds from the Kellogg Foundation, combined efforts in an experimental program to provide home health care services to any person needing assitance, whether short- or long-term. Higher than average hospital utilization rates and a shortage of long-term care facilities in the area, combined with a desire to reduce patient costs, prompted the establishment of the program.

In the author's opinion, success was based on the broad policies of patient eligibility and on the cooperation of the County Health Department. The program was based at Sheldon Memorial Hospital, had a Policy Committee, and a staff consisting of a medical director, secretary, occupational therapist, dietitian and truck driver. Nurses from the health department provided nursing care. Hospital patients were screened before discharge for possible inclusion in the program. In the home, most minimal care was available, as well as laboratory testing when necessary, and transportation to the hospital was provided for x-rays, etc. Because the program could not utilize nor support a full time social worker, arrangements were made for consultations with one at the state or county health department.

During the first year, 114 patients were "admitted" to the program, using 5700 days of service; over half of them were 65 and older. Referrals came from hospitals, nursing homes and families. The staff even began rendering services in nursing homes when their specialties were unavailable there (for example, OT). Use of the program seemed uniformly distributed across physicians and geographic areas of patient residence. Most patients had chronic and/or multiple illnesses. The first year, costs totalled $27,300 (most spent on nursing salaries and clerical costs) and average cost per day was $4 per patient, competitive at least with much long-term institutional care in Michigan (averaging at least $10 per day). Unfortunately, collections were poor: third party payers were reluctant to participate, and although Blue Cross was willing to cover costs, only 18% of program patients had Blue Cross coverage. Even with total cooperation of third parties, welfare agencies, and patients, 20% of total charges are expected to remain unpaid. In the future, emphasis will be placed on further reduction of costs, gaining cooperation of funding sources, and analyzing the program's impact on the need for institutional facilities.

Grimaldi, Paul L. "The Costs of Adult Day Care and Nursing Home Care: A Dissenting View," Inquiry, Summer 1979, 16: 162-165.

This paper discusses the cost analysis of the paper by Weissert (March 1978).

This author argues that Weissert has both overstated the cost per day of nursing home care and understated the cost of adult day care programs. The criticisms basically deal with the assumptions made by the first author in estimating various cost data and are not defended by empirical analysis. One of the strongest arguments made deals with the fact that a significant percentage of Medicaid recipients are reported to stay in nursing facilities less than 181 days, thereby arguing against Weissert's assumption on cost which projects the nursing home population to be institutionalized for a whole year when comparing annual costs. There is, however, some question as to how length of stay data is reported for long term care institutions, and that the Medicaid utilization reports may in fact never record more than 365 days as a length of stay. Grimaldi seems to ignore this possibility, although his point is well taken.

He correctly identifies some of the limitations utilized in Weissert's estimation process of adult day care, but also seems to argue that if adult day careprograms are more efficient and serve a larger number of people consistently, their costs will decrease significantly and thus make them a low cost alternative. He also correctly identifies several significant federal and state financial programs that adult day care patients would participate in and nursing home patients would not, thereby again impacting the total cost analysis. Finally, he points out that there may be significant costs of regulating an adult day care program, both in terms of the richness of services delivered and the patient population served. Both of these, if unconstrained, potentially add significantly to the cost of the adult day care program when compared to nursing home care.

Hammond, John. "Home Health Care Cost Effectiveness: An Overview of the Literature," Public Health Reports, July-August, 1979, 94(4): 305-311.

This article describes several studies which investigate home health care as an alternative to hospitalization or nursing home care. The author concludes that the evidence from the studies summarized suggests that from the perspective of third party payors, home care is less expensive than extended hospitalization. He also notes that the limited number of articles available for review indicates caution in drawing similar conclusions regarding the effect of home care on unnecessary hospital admissions. From available information, the costs of home health services for patients requiring the same level of care are roughly equivalant to the costs of nursing home care.

The article contains a review of fourteen hospital-home care studies, none of which are directed to the elderly or mentally handicapped. Most of the studies involve Blue Cross subscribers, less than the age of 65.

Four nursing home--home health studies are described. Only one of these, the project by Brickner in New York City has a large enough sample size to draw any conclusions. Two hundred twenty-two patients participated in this study, but the cost data is incomplete.

The author describes a four-volume set of reports entitled "Applied Research in Home Health Services" which describes several federally funded demonstration projects in home health care. These four volumes are available from National Technical Information Service.

Kastenbaum, Robert and Sandra E. Candy. "The 4% Fallacy: A Methodological and Empirical Critique of Extended Care Facility Population Statistics," International Journal of Aging and Human Development, 1973, 4(1): 15-21.

Much use has been made of population statistics which indicate that only 4% of those over 65 are in nursing homes and other extended care facilities (ECF). These data are misleading, however, for they are cross-sectional and seriously underestimate the probability of a person coming to an ECF sooner or later. Two small empirical studies are reported using, respectively, published obituary notices and death certificates for the metropolitan Detroit area during 1971. It was found that a minimum of 20% of all men and women over 65 who died in the study year were residents of a nursing home, and 24% were residents of one or another kind of ECF. Clearly, more people died in ECFs than are usually thought to be there in the first place. Discussion focuses upon the magnitude of the terminal care problem and the need to recognize the full scope of ECF difficulties which have often been underestimated because of careless use of the population data.

The obituary notice study is based upon the identification of 1,184 deaths and the death certificate study is based on an over 65 population of 2,234.

Kovar, Mary Grace. "Health of the Elderly and Use of Health Services," Public Health Reports, January-February 1977, 92(1): 9-19.

This article presents statistics on the elderly in the United States and their use of health services. Patterns extracted from 1973-1975 data are compared with trends of previous years. A few demographic projections are postulated up to the year 2030. The data basically reflects a growing proportion of elderly in the United States and their consequent increased use of short-stay and long-term care institutions. Use of outpatient home health and psychiatric care facilities by the elderly, is increasing at a much slower rate, however. There are no good estimates of the number of elderly served by home health alternative programs, nor of the number who might benefit.

Lang, Sydney L., and Margaret T. Ritchie. "'Home' for Aged," New York State Journal of Medicine, June 15, 1973: 1698-99.

The authors, members of utilization review committees at a hospital and a nursing home, point out their concerns (both economic and social) that more home-oriented health services are needed by the elderly community. Utilization review can determine the proper level of care for an elderly patient, but this assessment is worthless if that level is unavailable. Lang and Ritchie feel that the ultimate goal of medical management is the maintenance of elderly persons in the home or home community, and to this end, propose an expansive home health care program. This program would include: social services, home health aides and housekeeper/food services. A major component of the system would be volunteers who would each assume responsibility for an elderly person needing help. Comparative economics of alternative forms of care for the aged are presented below:

In-hospital	$100 daily
Extended Care/N.H.	50
Health Related Facility	25
Foster Home	10
Home	5

(Sources for cost estimates are not documented.)

LaVor, Judith. "Excerpts from 'Long Term Care: A Challenge to Service Systems,'" Office of the Assistant Secretary for Planning and Evaluation Department of Health, Education, and Welfare, April 1977.

This paper describes several of the federal and state regulatory and reimbursement barriers to structuring alternatives to nursing homes care. It discusses several possible organizational structures for basing community care programs. Potential state and local roles are identified. The author discusses several specific changes which might be entertained in regulation and reimbursement at the state and federal level in order to support alternative community care programs. No statistical or economic analyses are presented.

LaVor, Judith and Marie Callender. "Home Health Cost Effectiveness: What Are We Measuring?" Medical Care, October 1976, XIV(10): 866-872 .

Because of the long debate over definitions of home health care, this paper attempts to establish a conceptual framework for various types of this care, including cost effectiveness measures. The two major goals of home care are to keep people in their normal environments and to aid people in recovering after an institutional stay; most home health agencies attempt to accommodate both concepts. The authors define the three major levels of care as: 1) intensive: provision in the home of a complex of services, or one service frequently rendered (third parties normally cover only this type); 2) basic or maintenance: homemakers, transportation, meals-on-wheels, etc., (seen by third parties as increasing overall costs -- not health services); 3) intermediate: in-between the other two; it is very vaguely defined, but seen as a "fertile area for further exploration." The intensive level of care is appropriate to shorten institutional stays.

Home care has long been considered cheaper than institutional services, but the authors point out the incomparability of data, especially on costs (the former does not take into account room, board and personal care expenses). Information has not generally been collected for research purposes. LaVor and Callender suggest that standardized cost accounting systems, patient data on a per-diem or per-diagnosis basis, equally defined cost elements and comparable patient characteristics are necessary before cost comparisons and generalizations can be made. They caution that population characteristics are not often taken into account, such as comparison of an urban program with a rural one, or a program serving middle-class versus one serving the isolated poor. On top of this, the term "institution" is used broadly, without differences in types of institutions laid out. Their conclusion is that the greater the individual's impairment, the greater the cost of care; and intensive home care may be costly compared to nursing home placement, but not so expensive when compared to hospitalization.

After a review of Federal expenditures in the home health area, (these have not exceeded 1.1% of either Medicare of Medicaid's budget between 1969 and 1973) the authors state their opinion that fears of any large fiscal impact are totally unwarranted even with increased utilization, broadened eligibility criteria and an expanded provider network.

Leonard, Lois E. and Ann M. Kelly. "The Development of a Community-Based Program for Evaluating the Impaired Older Adult," The Gerontologist, April 1975, 15(2): 114-118.

A mental health program designed to evaluate the impaired older citizen within his own home is reported by the Bureau of Patient Care (County Health Department) in Baltimore. Patients who are being considered for placement in a state mental hospital are assessed by a physician and social worker team who determine the patient's level of functioning with a goal of identifying available strengths and appropriate resources to mobilize for his care. A close relationship with other services for the elderly (such as a newly developed Geriatric Clinic) along with an educational approach for family and patient have resulted in more appropriate placement for the older adult manifesting behavioral problems. In fact, in a review of the 465 persons screened by the "Geriatric Evaluation Service", the authors found that 47% remained in their homes, and only 21% did indeed enter psychiatric facilities. The typical patient seen was white, lower-middle class, had a local physician and a concerned family which had contacted at least one resource before the Bureau. As the program grew, more and more referrals came from clergy, family and other community agencies. Three case studies of "successes" were presented as reinforcement of the benefits of this intervention. The authors conclude with several considerations which emerged through program experiences: primary concern with safe-guarding the patient's civil liberties, importance of health professionals in understanding the elderly patient, and education of those who are involved in planning for the elderly.

Libow, Leslie S. "A Public Hospital-Based Geriatric 'Community Care System'," The Gerontologist, August 1974, 14: 289-290.

Dr. Libow describes a comprehensive health care system for the elderly in New York, and urges other community hospitals (or long-term facilities) to "lead in the formation" of similar programs. The essential components of the system are: Visiting Nurse service, physician home visits by the Home Care Division of the hospital, a geriatric convalescent unit in the hospital for the "marginally compensated" elderly patient, a geriatric health maintenance and diagnostic clinic and collaboration between these services and the local proprietary community nursing home. The system was integrated by the community hospital, and because all, or most, of the services were already available (and would be in most areas), costs were low. Libow finds this a viable solution to the problems of the elderly: the "old system" required mobility, strength, competitiveness, money and keen awareness of the splintering of services-all detrimental to the situation of most ill elderly.

Maddox, George L. and David C. Dellinger. "Assessment of Functional Status in a Program Evaluation and Resource Allocation Model," The Annals of the American Academy, July 1978, 438: 59-70.

This paper describes the inter-rater and intra-disciplinary reliability of the OARS questionnaire. The authors indicated that it takes about 35 minutes to administer the OARS questionnaire and it is a reliable technique for scoring the dimensions of social resources, economic resources, mental health, physical health, and activities of daily living. The paper also briefly describes the U.S. General Accounting Office study in Cleveland, Ohio which has utilized the OARS survey on a defined population of 1,609 persons 65 years of age and over in Cleveland, Ohio.

Montana Foundation for Medical Care, Summary of Boarding Home Review, September 1979.

This summary describes a 1978-1979 study of Montana retirement homes. Fifteen of the thirty licensed boarding homes in the state were selected, on the basis of potential problems. Since this was not a random selection of homes, there can be little extrapolation to the general population of homes, the residents, or the state population.

One hundred seventy-five clients were reviewed by a nurse coordinator supervised by a physician. No social assessment was included in this review. Five of the 175 residents were eventually found by both the nurse coordinator and physician to need intermediate care. The report estimates that approximately 9% of the 175 residents were inappropriately placed. The report makes several recommendations regarding boarding homes for the elderly and disabled: creation of personal care homes (which currently are not defined and regulated in Montana); screening procedures for placement and alternative living arrangements; third party payment; and common terminology for various types of housing and boarding home arrangements.

Morris, Robert. "The Development of Parallel Services for the Elderly and Disabled - Some Financial Dimensions," The Gerontologist, February 1974, 14: 14-19.

Current financial arrangements for the elderly and disabled favor institutional care over at-home care. Several studies are discussed that reveal that non-hospital based home care programs can be economical for 15-20% of the institutionalized population and for 14% of the non-institutionalized aged. Reimbursement alternatives involving Medicare, private insurance and voluntary organizations are suggested.

Nagi, Saad. "An Epidemiology of Disability Among Adults in the United States," Health and Society, Fall 1976.

In 1972, Saad Nagi completed a survey of disability among adults in the United States. To derive estimates of the nature and amount of disability, Nagi measured the functional ability of adults as it related to both occupational and activities of daily living performance.

To measure functional ability, the author completed almost 6,500 interviews out of a probability sample of 8,090 households across the continental United States. Respondents were asked 15 questions pertaining to physical and emotional performance. To each of these questions a weight was attached which represented the estimated importance of the attendant activity in the total picture of functional ability. The scores were then divided into four categories: 1) no or minimal limitations; 2) some limitations; 3) substantial limitations; and 4) severe limitations.

When Nagi cross tabulated age with the degree of limitations experienced by an individual, he came up with the following results:

Total N = 6487

Age	Substantial Limitations	Severe Limitations	Mobility Assistance Needed	Personal Care Assist Needed
18-44	1.2%	0.8%	0.6%	0.5%
45-54	5.0%	3.6%	2.6%	1.4%
55-64	8.4%	7.4%	5.2%	2.7%
65-74	9.7%	10.1%	8.5%	3.0%
75 and over	22.5%	19.9%	16.7%	9.1%

Of the total sample the author estimated that 3.5% of the persons needed mobility and 1.8% needed personal care assistance.

Nagi clearly draws the connection between limitations in physical performance and emotional performance and the need for assistance with the activities of daily living. The following are his results:

Limitations in Physical Performance	Mobility Assistance	Personal Care Assistance
Substantial Limitations	32.2%	3.2%
Severe Limitations	42.7%	31.7%
Limitations in Emotional Performance		
Substantial Limitations	6.5%	2.8%
Severe Limitations	20.0%	11.7%

Orleans, Miriam. "Mexican-American Elderly in Three Colorado Communities: An Assessment of Needs and Resources; Final Report," National Technical Information Service, Springfield, Virginia, March 24, 1978.

This study was based on 496 interviews of households with an age population of sixty years and older. A questionnaire, in both English and Spanish, was used to obtain data on demographic characteristics, living arrangements, mobility, financial status, interaction with others, capacity for independent living, health status, use of health, social and other services, and attitudes toward nursing homes. Data analysis was primarily descriptive. Those living in larger urban areas were highly similar in health and illness status with multiple musculoskeletal problems most common. High incidences of illness affecting quality of life were reported in all areas, with dental care and heart conditions more prevalent in urban areas and visual problems in the rural areas. Use of health and dental care varied in accordance with availability of resources, with dental care most difficult to obtain. Financial problems were the greatest barrier to seeking all care for which Medicaid and Medicare are the main sources of assistance. There was a preference to remain in the home rather than live in a long-term care facility. Social, welfare, and health care programs do not adequately meet needs. Recommendations and suggested courses of action were proffered to alleviate problems faced by these elderly.

The survey was administered to residents in the Colorado communities of Denver, Greeley, Johnstown, and Milliken. Approximately 9% refused to respond to the interview and 18% of the surveys had to be discarded because of moves or deaths.

Palmore, Erdman. "Total Chance of Institutionalization Among the Aged," The Gerontologist, 1976, 16(6): 504-507.

This study describes the institutionalization percentages of a group of 207 persons in the Piedmont, North Carolina area. These individuals were all community residents aged sixty or older at the beginning of the study in 1955, and died prior to Spring, 1976. In addition, there were 64 survivors who were not included in the analysis. This study presents a well founded statistical analysis on the incidence of institutionalization (chronic disease hospitals, nursing homes, and homes for the aged) of the elderly during their senior years. The only apparent shortcomings of the study are in extrapolating from this particular geographic area to others and the desirability of a larger sample size.

The study showed that during the twenty years, 26% of the population was institutionalized one or more times before death, and the vast majority died in an institution. (Of those institutionalized, all but one stayed for more than six months which is an empirical finding which is counter to some unsupported assertions of other researchers about lengths of stay of the elderly in institutions).

Some of the statistically significant findings are the following: persons living alone have a 33% probability of being institutionalized; persons never married or separated have a much higher probability of being institutionalized than those who have a spouse present or are widowed; persons with no, one, or two children have a much higher probability of being institutionalized than those with three or more children; women are much more likely to be institutionalized than men; and persons with adequate financial resources are much more likely to be institutionalized than those who cannot makes ends meet. The latter, unexpected finding is thought to be related to the fact that persons with financial resources can buy their way into institutions, but later become financially dependent because of the depletion of their savings and other resouces. This study also found that institutionalization is very much a function of age, with 2% of persons from age 65 to 69 being institutionalized as compared to 14% at ages over 85.

This study is scientifically sound and an important contribution to the literature on being able to project utilization of institutions by the elderly on the basis of demographic characteristics and financial resources.

Pfeiffer, Eric, editor. Multidimensional Functional Assessment: The OARS Methodology, A Manual, January 1976, Center for the Study of Aging and Human Development, Duke University, Durham, North Carolina.

This manual describes work begun in 1971 by the Duke University Center for the Study of Aging and Human Development to undertake a series of research studies which would explore alternatives to institutional care for impaired older persons. Part of this work resulted in the development of a reliable and valid practical assessment methodology known as OARS (Older Americans Resources and Services). The manual and instrument development took approximately four years.

This manual includes a justification for a detailed instrument, describes the steps used to validate and test the reliability of the instrument, and describes three studies that have been undertaken with the instrument. The OARS methodology has been very well thought out and designed with emphasis placed upon good design, testing for validity and reliability, uniform training and instructions, and dissemination of study results.

Quinn, Joan L. "Triage: Coordinated Home Care for the Elderly," Nursing Outlook, September 1975, 23(8): 570-573.

Under the aegis of the Council on Human Services, a three-year project to coordinate a system of home care for the elderly was initiated in a seven-town area in Central Connecticut. The objectives of "Triage" are to:

- Provide a single-entry mechanism by which the elderly's needs are evaluated
- Develop the necessary preventive and supportive services
- Integrate efforts to give coordinated care
- Create financial support as needed
- Evaluate and determine the cost-effectiveness of the program.

The more than 100 referrals per month came from 27 different sources, including visiting nurses, senior centers, clergy and physicians, or the client concerned. A geriatric nurse-clinician makes the initial client contact, assesses the client's needs and performs a physical exam; the social worker and the nurse then decide on the services the client should use and facilitate utilization of them. Follow-up is also an important part of the team effort. Case studies were presented to demonstrate program success, but as yet, cost effectiveness has not been tested.

Quinn feels that the most important aspect of "Triage" is its ability to help the elderly client feel his worth in life and to ultimately die with dignity.

Quinn, Joan Litchfield, R.N., M.S. Triage, Inc., An Alternative Approach to Care for the Elderly, 1974-1979, Connecticut Department on Aging and National Center for Health Services Research, Grant No. HS0256, undated, approximately 1980.

This is a summary report prepared by the Triage Project to describe the first five years of the project development. The author of the report is the Project Director. An independent evaluation report based on work performed at the University of Connecticut is expected in early 1981. The Triage Project is located in central Connecticut in an area around Plainville. It is organized as a nonprofit corporation receiving funds from the State of Connecticut, through the Department of Aging, and the Federal Government through the National Center for Health Services Research and the Health Care Financing Administration. Medicare waivers were granted in 1975 to provide services to benefit not more than 3,000 Triage clients. Through late 1978, Triage had received referrals totaling 4,439 clients and had provided assessments to 2,128 clients. Seven nurse clinician/social service coordinator teams provide assessments.

For fiscal year 1978, fifty new clients were assessed per month at a cost of $100.94/assessment. Coordination and monitoring of 1,422 clients per month had a unit cost of $15.31/client month. Reassessments at the rate of fifty clients per month cost $58.34/reassessment. Project administrative cost per client per year was $339.36.

Fifty-eight per cent of the clients served are age 75 or greater. Thirty-six per cent are male and sixty-four per cent are female. Most clients are referred by family, self, and the Visiting Nurse Association, with these three sources accounting for more than 64% of all referrals.

Triage estimates that for fiscal year 1978, 81,275 institutional days were saved, with 61,320 saved by prevented admissions and 19,955 saved by delayed admissions. After taking into account the Triage costs per client, net dollars saved for the year are estimated at $1,688,329. All of the value judgments regarding days saved presented in this report are based on Triage nurse-clinician/social service team judgment, and are not based on comparisons with a controlled population. The cost savings projected exclude the cost of physician visits, ancillary charges, drugs, and other medical costs incurred by both patients in nursing homes and Triage clients.

Ries, Bernard and Jon B. Christianson. "Nursing Home Costs in Montana: Analysis and Policy Applications," Montana State University (Bozeman, MT), Montana Agricultural Experiment Station, Research Report 117, December 1977.

This study is based upon 1974 data collected from fifty of the seventy-five nursing homes in Montana. This study particularly addresses the issues of whether or not type of ownership and size of nursing home contribute to significant differences in nursing home cost. Because of data confounding programs, the eight reporting nursing homes that are operated by a hospital were excluded from the analysis.

The major study conclusions are:

1. The economies of size and the different cost categories studied imply that larger facilities are more efficient and less costly, up to a point. The optimal nursing home size was calculated to be 122 beds, although the authors describe several problems associated with consolidating institutions to this size and note that most nursing homes in Montana are substantially smaller than this number.

2. There is no significant change in the economies of size for homes located in smaller communities.

3. Facilities run for profit do have lower cost, which may be due to the profit incentive or a different mix of services and patients.

4. The overall effect of location, as defined in the study, is minimal to the determination of cost.

5. The greater the proportion of licensed SNC beds in a facility, the higher the cost per patient day. Costs apparently do increase as required services become more intensive.

This study does not address alternatives to nursing home care.

Schlenker, Robert E., et al. Home Health Grant Program Evaluation--Executive Summary, Center for Health Services Research, University of Colorado Medical Center, Denver, Colorado, March 1979.

This study analyzes the Federal Home Health Grant Program by analyzing 56 home health agencies which received Federal grant awards in 1976 totaling three million dollars. The two primary evaluation criteria utilized are capacity development and financial self-sufficiency of the agencies.

The number of visits related to the grant was used as the principal indicator of capacity development. During 1977, the year following the award of the grants, the average expansion agency provided 1,200 grant related nursing visits and 1,000 allied visits. (Allied visits are those made by home health aids, therapists, and social workers.) The average developmental agency provided 1,000 nursing visits and somewhat less than 400 allied visits. For the 39 grantees with reliable cost data, visits cost an average of approximately $18. This cost had a wide range among the agencies, with the Visiting Nurse Associations having the lowest average cost per visit of $10.75.

While most of the grantees received more total revenues than total expenditures, the amount of revenues generated from patient care services was consistently less in relation to total expenditures. About half the grantees covered less than half their total expenditures with patient care revenues. These findings suggest that in order to sustain the same level of expenditures after grant funding ends, grantees will have to increase their patient care revenues considerably.

The study identifies important factors to success: financial self-sufficiency was strongly related to reliance on Medicare reimbursement for operating revenues, Visiting Nurse Associations provided significantly more visits per grant dollar than other types of agencies, state agency grantees did less well than other types of agencies in terms of financial self-sufficiency measures, and agencies located in preference areas were not as successful in achieving either program objective.

There is no reference in this article to treatment of the elderly, or comparisons with institutional programs.

Scutchfield, F. Douglas and Donald K. Freeborn. "Estimation of Need, Utilization, and Costs of Personal Care Homes and Home Health Services," HSMHA Health Reports, April 1971, 86(4).

In 1970 Scutchfield and Freeborn conducted a study designed to determine the feasibility of implementing home health services and personal care homes into the health care system of rural Northeastern Kentucky. The authors' approach was to submit a questionnaire with the charts of all of the patients admitted to the 40 bed primary hospital servicing a four county area. The attending physicians were asked to provide the patient's demographic information and to suggest how that patient would have been differently placed had personal care homes and home health services been available. Questionnaires were at least partially completed for all 318 eligible patients; all admittees being eligible except pediatrics under age 14, obstetrical patients, and those who died while in the hospital.

The authors found that 66 (21%) of all eligible patients would have been referred to home health care had it been available. The attending physicians estimated that the home services required would have amounted to an average of two hours weekly for three months. Medicare and Medicaid would have provided the primary reimbursement for this program, had it existed, since only 9.3% of the patients who would have been referred to a home health service would not have been covered by at least one of these programs. Patients over age 60 would have constituted 86% of the total number referred to home health services, those 70 years and older, 70%.

Seidl, Fredrick W., Carol D. Austin, and D. Richard Green, "Is Home Health Care Less Expensive?" Health and Social Work, May 1977, II(2): 6-19.

This work describes a methodology for comparing the costs of the home care program to nursing home care. It points out the usual falacious argument which compares a day of home health care cost to the cost of a nursing home day. The first major point the authors make on this issue is the necessity of identifying "who but for" clients who would be in a nursing home if it were not for the availability of the home health care program. The authors correctly indicated that very often the home health care programs will provide services (and incur costs) for a number of clients who are not "who but fors". This increases the total cost of the home care program and must be included as a basis for comparison with the nursing home care situation.

The authors correctly point out that in conducting such an analysis, the average number of days of service a client would receive in the home care program must be compared with the number of days in a nursing home. They indicate that that utilization data is not readily available at this time.

The authors cite the work of Greenberg, who suggests that the disability level of clients will also determine the cost effectiveness of home care programs. He argues that the more disabled the client, the more likely that the nursing home can provide the intensive and wide range of services required in a cost effective manner, as compared to the less disabled client who may require only one service on a less than daily basis.

In analyzing the costeffectiveness of home care, the authors also correctly point out that no nursing home costs are saved unless the appropriate placement of individuals in home health care programs results in either fewer nursing home beds or a lower occupancy of nursing home beds. If it is important to control costs, the authors point out, there is a preference for non-provider, centralized case management. This avoids the provider's conflict of interest in conducting the case management and the inherent problems associated with decentralized case management which include the potential for employing different standards and different local communities and the potential for clients who do not meet the service definitions to become recipients in the home care service.

This article also stresses there are important start-up costs in developing alternatives to nursing home care. New services need to be created and this takes time and can be frustrating. These start-up costs and the initial low service volume may result in short run inefficiencies and higher unit costs. New Personnel need to be recruited and trained for the provision of home health and homemaker services.

There is a very interesting description of how to analyze costs in terms of public vs. private when comparing alternatives to nursing home care to nursing home care. The authors stress the importance of considering all of the public and private funding sources, not just Medicaid or total cost. There also are potentially significant socioeconomic costs which are most difficult to measure, including an improved lifestyle for the client and the client's family. Most important, however, is to not just address the costs in terms of Medicaid program dollars or total cost. All significant state, federal, and private funding should be included.

Select Committee on Aging, Comm. Pub. No. 95-139, Home Care for the Elderly: The Need for a National Policy, February 22, 1978, Hearing before the Select Committee on Aging, House of Representatives, Ninety-Fifth Congress, Second Session.

The hearing contains expert testimony from a variety of federal and local sources. Of particular interest is the testimony by the GAO, DHEW (HCFA), Triage (a local Connecticut project), and the comments from an informal conference held in December, 1977 by Representative Max Baucus of Montana.

Based upon Social Security Administration actuary estimates, the GAO reports the following costs for expanding the availability of home health care services under Medicare:

- Eliminate limits on the number of visits in Parts A and B — $ 12.5 million
- Eliminate the skilled care requirement for Parts A and B — $ 1.25 billion
- Eliminate prior hospitalization requirement under Part A — $ 12.5 million
- Eliminate homebound requirement under Parts A and B — $ 92.5 million
- Add homemaker services with restrictions — $ 75. million.

Medicaid offsets are not taken into account in making these estimates. Therefore, all of them are high except perhaps the last. On a national basis, eliminating the limits on the number of visits under Part A and B, and eliminating the prior hospitalization requirement under Part A are the least expensive. The GAO also recommended a single entry point for elderly to coordinate alternative care services.

Mr. Derzon gave the primary testimony for the Health Care Financing Administration of DHEW. He explained that a major report from HCFA was due on alternative care to nursing homes by October 25, 1979, and that he was not prepared to make definitive costs and other statements at this hearing. He indicated that it is much harder to administer the standards for small, geographically dispersed home health services than it is to accredit a hospital, and there is concern about the lack of adequate standards under Title XX for which HCFA does not have direct administrative responsibility.

Three specific alternative care programs were discussed, including Triage in Connecticut. Ms. Joan Quinn presented the Triage testimony. Much of the general testimony, as is the case in other hearings, is based upon representative cases and not directed toward the experimental population outcomes. Triage started in 1974. Through December 31, 1977, there have been 4,002 referrals to the Agency. Of these, 1,844 clients have been assessed by seven nurse-clinician social service coordinator teams. The total number of active clients on December 31, 1977 was 1,384. Over 2,000

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clients wait to be seen. The services available under this expanded Medicare program include: short-term acute hospital care, long-term chronic or convalescent care, visiting nurse, home health aide, day care, meals-on-wheels, chore, homemaker, transportation, volunteer visiting, telephone reassurance, and the traditional physician, dental, podiatry, laboratory, radiology, physical therapy, and pharmacy services. Cost comparisons are presented for the first twelve months experience of health care expenditures among the 20% sample of Traige experimental clients (59 clients) who entered Triage between September 1976 and January 1977. Monthly per capita costs range from $314 to $66 depending upon level of risk. Persons between 75 and 84 had the highest annual per capita cost ($2927) while those persons between 65 and 74 years of age had the lowest annual per capita cost ($1407). Persons in the sample 85 years and older had an average per capita health care expenditure of $2277. The monthly cost for skilled nursing facilities in the Triage region ranges from $900 to $1300 for room and board alone, based upon Medicare reimbursement rates. The number of individuals in this sample is small (59) and it is not stated in the report whether or not both the program costs and the nursing home costs include all health care expenditures or only those included in the two individual programs.

Representative Baucus reported on an informal conference held in Montana in December, 1977 on the home health care issue. Several Montana organizations testified, including comments on the certificate of need and planning review process, the fact that many Montana counties doe not have access to a licensed home health agency, and in Lake County two agencies had been certified for a relatively small county.

The hearing testimony also contains three papers by Dr. Philip Brickner and his colleagues in New York City. One cost analysis comparing the St. Vincent's program with the average nursing home costs in New York City indicates that the hospital based home health care program costs less and the differences are greater as the patient goes from an ambulatory state to a bed-bound state. Annual costs for the St. Vincent's program range from $7,035 to $12,079 which compares with an average nursing home cost ranging from $8,266 to $32,162. All costs are in 1975 dollars. The St. Vincent's program costs are broken out into several components, including utilization per year and cost per visit.

Select Committee on Aging, [Committee Print], New Perspectives in Health Care for Older Americans (Recommendations and Policy Directions of the Subcommitte on Health and Long-Term Care), January 1976, Select Committee on Aging, House of Representatives, Ninety-Fourth Congress, Second Session.

Several different studies are reviewed in this report. Six home care programs are identified which have saved money due to reduced hospital days. The days saved per patient range from 12.9 to 49.8 and the net savings per patient range from $330 to $4590. The latter category are patients in traction in Rochester, New York for 1973. In four of these studies, the number of hospital days saved per patient is based upon physician judgment, not experience.

A January 1975 DHEW study cites figures indicating that between 14 and 25% of the approximately one million elderly persons in skilled and intermediate nursing homes may be unnecessarityly maintained in an institutional environment. Alternatives suggested include: outpatient clinics emphasizing geriatrics, multi-purpose senior centers, community care organizations, elderly day health care centers, and geriatric mobile health units. A number of recommendations for expanding Medicaid benefits are included in the report.

Shanas, Ethel. "Health Care and Health Services for the Aged," The Gerontologist, 1965, (5): 240-276.

National studies indicate that only about 4% of all persons over 65 in the United States live in institutions. Seven percent of all persons over 75 are in institutions, compared to only 2% of those between the ages of 65 and 75. However, it is estimated that between 7 and 8% of all old people in the United States are bedfast and home-bound at home.

Smith, Bert Kruger. The Pursuit of Dignity, Beacon Press, Boston, 1977.

PL 92-603, Section 222, (Social Security Amendments of 1972) authorized the first federal expenditures for experimental programs to provide Day Care Services for individuals eligible to enroll in the supplemental medical insurance program. In June 1974, six contracts were awarded for experimental programs. Day care and homemaker services were offered by the San Francisco Home Health Service and the Lexington-Fayette County Health Department programs. Day care services only were offered by Burke Rehabilitation Center in White Plains, New York and St. Camillus Nursing Home in Syracuse, New York. Two other contracts, for homemaker services only, were given to Inter-City Home Health Association of Los Angeles and Homemaker-Home Health Aid Service of Rhode Island. These six projects were evaluated for their effectiveness by Medicus, Inc. under contract to DHEW.

The author cites a study conducted by TransCentury Corp. of Washington, which showed that in a study of ten day care centers, the average cost at several centers was approximately $21.04 per day. This compared with an average cost of nursing home care of $18.00 per day at that time. However, the researchers cited many minor discrepancies which would tend to bring these two numbers very close together. It is also noted that the average day care resident might only attend ten to twelve days per month, whereas the nursing home resident would average thirty days per month.

The author summarizes the work of Dr. Eric Pfeiffer, who suggests a multi-dimensional plan for dividing the functional levels of persons into the following categories: physical functioning, psychological functioning, social resources, economic resources, and activities of daily living. He also recommends rating each person on each dimension according to these functional levels: outstanding function, average function, mild impairment, moderate impairment, severe impairment, and total impairment.

The author describes several model programs briefly, including: The Minneapolis Age and Opportunity Center, the Levinson Institute, and the Chelsea-Village Program in the lower west side of Manhattan.

Somers, Anne R. and Florence M. Moore. "Homemaker Services--Essential Option for the Elderly," Public Health Reports, July-August 1976, 91(4): 354-359.

Although the elderly prefer to remain at home when possible, and the Senate Subcommittee on Long-Term Care found home health care to be appealing from a number of standpoints, Somers and Moore state that the number of agencies providing homemaker services is not growing rapidly enough in relation to need. (At time of writing, there was one homemaker for every 5,000 persons compared to, for example, Sweden with 1:121 or United Kingdom with 1:726.)

As part of the home health care team, the homemaker provides the elderly with assistance in personal and household tasks they can no longer do themserves, as well as providing emotional support; some homemakers even assist in physical or speech therapy under supervision. The authors stress the importance of monitoring the quality of homemaker services. The National Council for Homemaker-Health Aide Services developed a set of standards in 1965 to begin the evaluation process.

Unpublished data to the National Council for 1974-75 indicate a cost of $5.28 per hour of homemaker services, averaged across 74 projects. The authors argue that this figure is misleading, because all services essential to maintaining a person at home were not included. Additional data are needed--uniformly reported and taking into account placement appropriateness, case by case. A study by the National Council pointed out that in-home care can be custom-fitted to individual needs, whereas institutional staffs are on-duty around the clock, regardless of patient census. Of course, benefits of home health care may not seem so positive when it is realized that third parties will not reimburse for home services; and Federal money is slow in coming to beef up the home health programs. These problems are further intensified by the priority given to acute illness by health professionals; the large amount of investment made in institutional facilities; changing consumer attitudes; and fear by third parties that noninstitutional abuses will be impossible to detect. A national policy on long-term comprehensive care for older Americans is needed, and homemaker services form a vital component of the envisioned continuum of care. The authors conclude their article with a series of recommendations for the leaders of the health professions:

1. Agree on a definition of homemaker service.

2. Agree on standards to assure good services and/or mechanisms to monitor program quality.

3. Extend the New York State Hospital Code which requires all hospitals to have a discharge planning program to other states.

4. Agree on a standard recordkeeping and accounting system.

5. Implement the recommendations of the Senate Subcommittee on Long-Term Care.

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6. Encourage coverage by third parties of home health services.

7. For national health insurance, formulate a realistic package of home health benefits to be included.

8. Encourage employment and training of homemakers under CETA and other programs.

Special Committee on Aging, Alternatives to Nursing Home Care: A Proposal with Discussion of Deficiencies in Federally-Assisted Programs for Treatment of Long-Term Disability, October 1971, prepared for use by the Special Committee on Aging, United States Senate by the Levinson Gerontological Policy Institute.

This study was prepared by Dr. Robert Morris of the Levinson Gerontological Policy Institute at Brandeis University in 1971. It describes both cost and utilization estimating procedures, and performs these estimates, although the data in many cases relates only to Massachusetts and is ten years old.

Estimates for volume of need for personal care at home are included in the paper, including the number of elderly most likely to use help in the United States. The various methods indicate that approximately 10% of the elderly population would make use of the home help benefit. The researchers suggest the consideration of a capitation method as one way of introducing alternative care programs for the elderly without requiring any radically new administrative structure at the beginning. The researchers estimate personal care visits at home by minimum skilled staff will cost approximately $7 per visit. Home-bound patients would require two visits per week, and patients with trouble getting around would require one visit per week. Ballpark estimates are made of the costs and savings for such programs for the United States in 1971.

This report suggests that potential providers of personal care include several organizations which now exist including: Visiting Nurse Associations, homemaker services, hospitals, senior citizen organizations, and other existing medical providers. Medical groups or HMOs could provide a parallel system for personal care if they are prepared to recognize the differences between medical and personal care and are ready to maximize use of less costly alternatives. The authors note that most of the views expressed in this report on the organization of alternatives to nursing home care are based upon urban experiences in the United States and Western Europe. There is insufficient data to predict with any confidence that this approach will serve rural areas as well as it will serve urban and suburban ones.

A 1969 Massachusetts' study indicates that only 37% of the elderly currently institutionalized belong in nursing homes, whereas 23% belong in home nursing or intermediate care, 26% require supervised or shared living, and 14% should have independent living arrangements. The researchers estimate that for the state of Massachusetts, only one in forty elderly persons in probable need of personal care services are receiving them.

Stanfield, Rochelle L. "Services for the Elderly: A Catch-22," National Journal, October 28, 1978, 10: 1718-1721.

This study cites a project in the Arkansas Office of Aging which has provided two million dollars to test and start up a case management program which will treat the service needs of the elderly on the individual basis.

University of North Carolina, Hospital Based Long Term Care Units in North Carolina. Chapel Hill, March 1972.

In 1972, Harvey Archer coordinated a study of the demographic and health care characteristics of the patient population in hospital based long term care units in North Carolina. The purpose was to identify possible barriers which would inhibit the movement of patients to appropriate care facilities. To collect the necessary information, the study was designed such that multi-disciplinary observation teams composed of physicians, nurses, senior medical students and hospital administrators visited 320 long term patients in both control and study group hospitals in late summer 1970. The data was obtained from the patient's medical record and the opinion of the charge nurse on his/her floor was accepted as to the most appropriate placement for that patient.

The study teams found that of the 320 patients in the project, 87 (27%) were inappropriately placed. Of these it was determined that 16 (18%) would have been more appropriately placed in limited home care, which they define as including public health nursing, meals on wheels, and other homemaker services. An additional 5 patients would have been more appropriately placed in organized home health including those services which require more skill. When considered as a whole, seven percent of those interviewed were considered by the charge nurses to have a health status such that they would have been better placed in some level of home health care.

University of Rochester School of Medicine and Dentistry, Patient Care Planning Council (now the Health Council of Monroe County, Inc.), and the Council of Social Agencies of Rochester and Monroe County, Inc., Health Care of Aged Study: Part II, An Analysis of Some of the Costs of Health Care for Older People in Monroe County, New York, 1968.

Industrial engineering time study data was utilized to estimate the cost of care to the elderly population of Monroe County, New York, for various health care services. The periods selected for gathering time data were randomly selected; however, the institutions observed were not randomly selected. Summary of costs per day, or per visit, for persons aged 65 and over at the levels of care studied for the period 1963-1966 are the following:

University Medical Center per day	$ 49.95,
300-350 bed general hospitals per day	$ 43.16,
100 bed general hospitals per day	$ 36.22,
Acute psychiatric unit cost per day	$ 53.15,
Intensive nursing care costs per day	$ 18.64,
Institutional nursing care costs per day	$ 15.21,
Coordinated home care costs per day	$ 7.92,
Home care (public health nursing) costs per visit	$ 6.11, and
Congregate living costs per day	$ 7.97.

This study made a significant contribution to developing a methodology for cost allocations of health care, to elderly, and in general. This was one of the first studies that allocated nurse staffing time in hospitals to specific patient categories.

Weissert, William G. "Adult Day Care Program in the United States: Current Research Projects and a Survey of 10 Centers," Public Health Reports, January-February 1977, 92(1): 49-56.

This report analyzes ten adult day care programs based upon a random sample of thirty patient records for each program. The basic services offered by all ten programs are: lunch, general nursing supervision and services, social work services, and personal hygiene. In addition, six programs provided special diets and seven gave dietary counseling to participants and their families. Three programs made a psychiatrist's services available. Half the programs provided physical and occupational therapy, and two offered speech therapy. Eight of the ten programs had provisions for some transportation for participants.

Although cost information is available for each of the programs, it is not tabulated in this report. The most costly program cost an average of about $62 per day which compares with the average cost for the other nine programs, $21.04. The author claims that with the one high cost exception, the costs fell within a fairly narrow range, but the specific range is not stated. The author states that the average day care cost of these ten programs substantially exceeded the average daily costs of nursing homes which was $15.63 in 1973-1974. However, the author does not report the fact that participants in adult day care programs do not participate every day, nor does he include a comparison of total health care and/or public expenditures.

The author describes two models of adult day care. The first type is narrowly defined in its service objectives and is targeted to a homogeneous group of participants who meet the very specific admission criteria which stresses health status. The second type includes a variety of sub-types. These programs are more oriented to social needs than the first type, but there is little exclusitivity in their goals, participants, or services. Model One programs are predominantly rehabilitation oriented; and Model Two programs are multi-purpose and usually less health oriented than Model One programs.

Weissert, William G., "Costs of Adult Day Care: A Comparison to Nursing Homes," Inquiry, March 1978, XV(1): 10-19.

This paper compares the cost of adult day care to nursing home care based upon a random sample of ten adult day care programs in 1974. Two basic models of adult day care were identified:

> Model I - or day hospital programs which are affiliated with health care institutions and draw patients primarily from them and Model II, or multi-purpose programs which primarily draw patients from the community.

Estimated daily cost for each participant in the ten adult day care programs range from $11.16 to $61.56 with an average of $25.09. Adult day care programs are more expensive than nursing home costs per day because they use more expensively skilled personnel, the transportation costs are significant, and administrative inefficiencies due to larger administrative staffs (which may be due to the smaller size of most adult day care programs as compared to nursing homes). When comparing annual costs of nursing home care to adult day care, the author cites an annual nursing home cost of $7,015.30 per person, which compares with an adult day care program cost of $2,771.60 (for an average of 2.5 day care sessions per week) to $4,434.56 (for four sessions per week). When living costs at home are included for the day care recipient, the costs for adult day care rise to $6,154.20 per year for four sessions a week. These cost estimates assume that comparable patients are being treated in both facilities; however, the author correctly points out that they are receiving different treatment profiles. All nursing home cost estimates are based upon national data and adjusted for inflation to the same time period as the adult day care costs.

Wilkes, Eric. "How to Provide Effective Home Care for the Terminally Ill." Geriatrics, August 1973, 28: 93-96.

Wilkes' article appears to have been written as a guide for the physician or visiting nurse who cares for terminally ill patients in their homes. Most problems for the home patient, as indicated by a survey of terminal cancer patients in 1965, are caused by pain, retention of urine or incontinence, nausea and vomiting, and open wounds. For each of these afflictions, Wilkes lists proper treatments, and also stresses the important role of the family (to be included as much as feasible) and the health professional (must be warm, communicative and understanding). He also discusses management of lesser problems, such as dyspnea, edema and anorexia. In all cases, Wilkes feels that some form of work, however minimal, should be encouraged whenever possible, to preserve the self-respect of the patient. The author devotes the remainder of his article to a discussion of social factors: the fact that younger patients and laborer class patients tend to die at home; and that not all people should die at home (for example, those with mental confusion or intractable pain). He concludes by stating, "It is doubtful whether efforts made to expand and improve the community services will result in any diminishing demand for hospital care at the end, but dying at home should be the norm for the...future. Its circumstances can be improved...by more attention to detail, more energy, more dedication, and a more sensitive interdisciplinary approach. The intimacy and expertise involved in family practice must lead the way in caring for the dying."

Williams, T. Franklin, et al. "Appropriate Placement of the Chronically Ill and Aged: A Successful Approach by Evaluation," Journal of the American Medical Association, December 10, 1973, 226(11): 1332-1335.

Over thirty months (June 1970 through January 1973), 332 patients in Monroe County, New York were evaluated by a physician, nurse, social worker, and medical specialty consultant team for nursing home placement. The evaluations took approximately three hours and included laboratory tests. The total evaluation recommendation process took about one week.

Eighty-two percent of the subjects were over 70 years old. All have had at least one diagnosis of a chronic disabling disorder and 77.7% have had two or more such diagnoses. Only 78% of the patients seen have a personal physician whom they saw on a regular basis. It is significant that 55% of the cases seen were recommended for placement other than nursing home, even though all of the cases would have normally been placed in a nursing home had this special project not existed. Thirty-four percent of all patients seen were recommended for a program of active medical treatment or a trial of intensive rehabilitation therapy. For another 23%, more diagnostic medical studies were sought before a decision was made.

The authors conclude that the yearly savings accrued by diverting approximately two-thirds of the Medicaid patients from nursing homes would be approximately two million dollars, although they do not consider the cost of the screening program, nor do they discuss the eventual placement of diverted individuals into nursing homes at some later time. The authors also cite the need for physicians and public health nurses,with special competence in the types of services rendered by the evaluation units. Most practicing physicians have little experience with the range and types of long-term care settings including assistant services which could facilitate peoples staying at home.

Wisconsin Department of Health and Social Services. Delivering In-Home Services to the Aged and Disabled: The Wisconsin Community Care Organization Final Evaluation Report, Fredrick H. Seidl, et al, April 1, 1980.

On October 1, 1974, the Wisconsin Department of Health and Social Services received a Demonstration Grant for a Community Care Organization. Three project sites became operational during the course of the project: Barron County, La Crosse County, and Milwaukee. The evaluation of the project was completed in April, 1980. Major findings at the local sites include: a consistent theme of turf defense and domain protection among providers and the project produced primarily expansion and supplementation to the ongoing service delivery system. The Wisconsin CCO experience provided several guidelines regarding the development of home care demonstrations from an organizational perspective: demonstration projects should be equipped with sufficient incentives and sanctions to begin shaping a more balanced delivery system; the development of home care services requires an infusion of government funds; a single, adequate and integrated source of funding for home care services will help cure the complexities introduced by fragmentation of current programs; demonstration efforts require a mechanism for controlling access to high cost services (such as preadmission screening); and longer start up and preplanning periods are necessary to deal with the organizational and administrative complexity at the local level.

The Wisconsin CCO used the Geriatric Functional Rating Scale as an instrument within the screening process. In addition to the GFRS, the OARS and Areas of Care Evaluation (A.C.E.) instruments were utilized with CCO clientele. The GFRS is primarily used to predict institutionalization, the A.C.E. for client assessment, and the OARS for treatment planning.

There are significant problems with the cost comparisons in this evaluation report, many of which are acknowledged by the authors. When comparing the experimental population in La Crosse with the control population in Eau Claire, the analysis indicates that there is a lower utilization of nursing home and hospital resources by the experimental population. However, medical assistance costs per capita is greater for the experimental population. One contributing factor to this result is that medical costs are higher in La Crosse than in Eau Claire. The researchers did not calculate the cost of services for the Eau Claire control group based on La Crosse prices. A second contributing factor of significance is that the average initial GFRS score for the La Crosse experimental population is 34.3, where it is 51.6 for the Eau Claire control population. This indicates that the control population is functionally more able than the experiemental population and less likely to require institutionalization over the next eighteen-month period.

Similar statistical questions of importance are present in this study for the Milwaukee experimental and control groups. At initial intake, the experimental group has a mean GFRS of 10.34, compared with a mean of 34.97 for the control group. In addition, the control group sample size is 79. Total medical assistance cost for the Milwaukee CCO clients, including CCO services and administration, was $330.04, compared with $325.42 for the control group. Of the CCO monthly client cost, $132.17 is due to CCO services and administration.

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The authors cite that because in Milwaukee there was both reduction of nursing home and hospital days for a small additional cost per client, that there is the potential to fine tune both administration and service costs to produce additional services at no additional cost under the alternative model. The authors also note that with the gate keeping mechanism, which this project did not have (to review nursing home admission requests), the potential to avoid or delay nursing home admission increases which may result in a more cost effective alternative program. Studies on the predictive ability of the three instruments utilized to forecast cost were mixed, with the GFRS and the A.C.E. performing better than OARS.

5.3. BIBLIOGRAPHY

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APPENDIX A

JRB SURVEY AND INSTRUCTIONS

QUESTIONNAIRE #: __ - __ __ - __ __ __

SURVEYOR: _____

DATE OF INTERVIEW _____

ATTEMPTED INTERVIEWS:	Date Completed	Not Completed
1st _____	☐	☐
2nd _____	☐	☐
3rd _____	☐	☐

NURSING HOME: ☐

MEDICAID I.D. # _____

Name: _____

Address: _____

_____

_____ zip _____

Telephone #: 406 - _____

Geriatric Functional Rating Scale: © 1975 GRAUER and BIRNBOM

JRB ASSOCIATES, INC. granted permission to use Geriatric Functional Rating Scale, August 17, 1979, by H. Grauer, M.D., for use in this questionnaire (page 2).

31. Sex: _____ 32. Age _____ 33. Type of Residence _____

34. Race: _____
1. White
2. Native American
3. Other

1. Private Home
2. Apartment
3. Boarding Type Home
4. Institution

35. Income Level: _____

1. Below $2500
2. $2500-$7500
3. Above $7500

36. Does respondent have children, with whom he gets along, living in the same county? _____ (yes = 1, no = 0)

If 36 is "yes":

37. How much annual financial support does respondent think children would need to successfully house respondent? _____

1. $0 - $300
2. $300 - $500
3. $500 +

38. Does person currently: own a car, have a valid driver's license, and use the car for transportation? _____ (yes = 1, no = 0)

39. Does respondent have private health insurance? _____ (yes = 1, no = 0)

If 39 is "yes":

40. Does policy cover assistant/home care? _____ (yes = 1, no = 0)

* * (ASK ONLY NURSING HOME RESIDENTS) * *

41. Why was nursing home placement chosen? (ONE "BEST" ANSWER) _____

1. Social: (e.g., family urging)
2. Medical: (e.g., appropriate level or not)
3. Financial: (couldn't afford living and care elsewhere).

* * * (ASK THIS IN CONJUNCTION WITH NUMBERS 28-30, * * * FRS, ONLY IF RESPONDENT INDICATES FINANCIAL INDEPENDENCE)

42. Is financial status stable or changing? _____ (changing = 1, stable = 0)

43. Have you had to. or will you have to, sell possessions to maintain independence? _____ (yes = 1, no = 0)

44. Can respondent estimate duration of independence: _____

1. 0 - 1 year
2. 1 - 5 years
3. Permanent

-continued-

Functional Rating Scale

I Circle the appropriate score value for each area

PHYSICAL CONDITION						
1. Eyesight	Watches TV Reads Needlework	0	Distinguishes faces	-3	Sees light only	-10
2. Hearing	Normal voice	0	Loud voice	-3	Deaf	-5
3. Mobility	Fully mobile Dresses Carries Parcels Rides bus	0	Uses cane or should use one Dependent on railings	-3	Requires cane & other support Wheelchair	-15
4. Pulmo-Cardio Vascular Function	No restrictions	0	1 flight of stairs 1 city block	-3	Partly or totally bed-ridden	-20
5. Diet	No restrictions	0			Yes	-3
MENTAL CONDITION						
6. Disorientation	None	0	Time	-3	Person & Place	-15
7. Delusions	None	0	Mild-severe Suspiciousness	-3	Overt	-10
8. Memory loss	None	0	Benign	-3	Malignant	-20
9. Energy & Drive	Normal	0			Hypoactive or Hyperactive	-5
10. Judgment	Intact	0			Impaired	-5
11. Hallucinations	None	0			Auditory-visual	-10

II Circle the score value only when the answer is YES in each area

FUNCTIONAL ABILITIES	
12. Reads and writes letters	+2
13. Able to use telephone	+5
14. Able to bank and shop	+5
15. Able to prepare simple meals and bake	+7
16. Washes, dresses and toilets self without assistance	+5
17. Uses public transportation	+7
18. Able or would be able to take own medication and follow diet	+10
SUPPORT FROM THE COMMUNITY	
19. Ethnic compatibility in neighborhood or residential area	+2
20. If living alone, can get support and help from a relative, friend, neighbor, or janitor	+10
21. Able to shop at reliable grocer's (willing to deliver when necessary)	+5
22. Availability and accessibility of supportive and recreational facilities -	
- Clubs (i.e. senior citizen center, etc.)	+2
- Church, synagogue	+1
- Library	+1
- Park, shopping center, restaurant, movies	+1
23. Geographic availability and accessibility of -	
- Public Health Nurses	+2
- Meals-On-Wheels Service	+2
- Homemaker Services	+2
- Friendly Visitors	+2
- Hospital with emergency and clinic facilities	+2
- Public transportation	+2
LIVING QUARTERS	
24. Elevator service or living on ground floor or basement	+3
RELATIVES AND FRIENDS	
25. Not married but lives with compatible and helpful relative or friend	+5
26. Lives with incompatible relative, friend or spouse	-5
27. Lives with able and compatible spouse	+10
FINANCIAL SITUATION	
28. Totally independent	+5
29. Dependent on helpful relative	+3
30. Dependent mainly on Social Security S.S.I. or other community resources	0

Please check to make sure that this form has been reviewed and completed. You may make additional comments on the reverse side.

INSTRUCTIONS FOR COMPLETING THE MONTANA ELDERLY NEEDS ASSESSMENT SURVEY, INCLUDING THE GERIATRIC FUNCTIONAL RATING SCALE

Prepared by

JRB ASSOCIATES, INC.
40 DTC West
7935 East Prentice Avenue
Englewood, Colorado 80111

(303) 773-6883

January 24, 1980

The purpose of this needs assessment survey is to facilitate a brief but wholistic evaluation of a person's ability to cope on an everyday basis within the surrounding community. It enables the interviewer to balance the respondents' physical and mental status with the respondents' functional abilities and the resources present (or not present) within the surrounding community that could compensate for any disabilities.

Administrative Procedure

1. The face sheet of the questionnaire is completed during the first interview attempt to enable the interviewer to find the respondent again, and to avoid duplication. It can also be used as an initial check on the respondent's mental status.

2. Items 31-41 on page one are completed first. Items 42-44 are completed in conjunction with items 28-30 on the Geriatric Functional Rating Scale, if applicable. This process gives the interviewer clues concerning the mental status of the respondent.

3. The Geriatric Functional Rating Scale is completed next, on the basis of the respondent's answers to questions and the interviewer's observations. The respondent receives one score each for items 1-11; items 12-30 are scored only as applicable in each specific instance. For Items 1-11, varying degrees of disability are reflected by negative scores.

Rating Scale Procedures

1. Complete all information on the top half of the page by completing the blank spaces with the appropriate response.

2. Beginning under CLIENT PHYSICAL CONDITION, for items 1 to 11, circle one score for each.

3. On all remaining items, 12 to 30, circle only those scores which are applicable.

Specific Instructions, Definitions and Criteria

Items 1-5 (Physical Condition)

Item 3 - Mobility

Disability (negative score) on this item reflects immobility due to muscular or skeletal conditions rather than cardiac - or pulmonary - specific conditions (See Item 4). Impairment is usually due to osteo-arthritis or muscular weakness or spasm secondary to a stroke.

Item 4 - Pulmo-Cardiovascular Function

A negative score on this item reflects immobility due specifically to cardiac or pulmonary condition. If cardiac and/or pulmonary function prevents a person from climbing more than one flight of stairs or from walking more than one city block - Score -3.

While there may be some overlap between these areas, only one extreme negative score is given. Thus, if a respondent is at least partly bedridden (including confinement to a wheelchair when not in bed per se) it must be discerned if this is due primarily to Item 3 or Item 4: if Item 3, a -15 is scored; if Item 4, a -20 is scored--not both.

Items 6-11 (Mental Condition)

These factors are assessable through general conversation; e.g., asking the person how old he/she is, how long he/she has lived where he/she is, where he/she lived prior to that, how he/she likes the neighborhood, weather, and so on.

Item 6 - Disorientation

Score -3 if a person is disoriented to one or more of the following: time of day; day, week, month or year.

Score -15 if the person seems unaware of where he/she is or who he/she is.

Item 7 - Delusions Try to ascertain:

(a) Whether he/she feels (unrealistically) that some people or institutions are against him/her;

(b) Whether neighbors are (unrealistically) particularly nasty and/or if he/she thinks they are taking things from him/her;

(c) Whether he/she has unwarranted influence over others or is influenced in an unrealistic way by others.

If the answer to one or more of these questions is "yes", circle -10.

If there is an indication of severe suspiciousness, but the person will not admit overt delusions, circle -3. If you cannot detect any delusions, circle 0.

Item 8 - Memory Loss

From your experience with this individual, consider whether he or she knows the following:

(a) Year and place of birth

(b) Year of marriage

(c) Year of arrival to this community (if applicable)

(d) Name of school attended

(e) Previous address

If you feel a person cannot answer 3 of these questions, but would remember date of birth and age, circle -3.

If you feel a person cannot answer any of the questions under Item 8--would he/she know the name of his/her doctor, social worker or volunteer in a club, ages and names of his/her children, and present addresses. If he/she would be unable to answer these questions, or answers very poorly, circle -20.

If he/she would be able to do well on all questions under Item 8, circle 0.

Item 9 - Energy and Drive

If a person is generally sad, apathetic and retarded in his/her actions, he/she is hypoactive and probably depressed. If he/she is restless, agitated and overtalkative, he/she is possibly manic. In both cases, circle -5.

Item 10 - Judgment

Measures "common sense" (the ability to make the right decisions, to dress appropriately, seek help when needed, to budget properly, etc.). If judgment seems intact, circle 0; if markedly impaired, circle -5.

Item 11 - Hallucinations

Most common are auditory. The person will hear a voice or voices when nobody is talking to him/her. Senile persons living alone may "hear" neighbors complaining about them accusing or vilifying them; a widow may "hear" her deceased husband talk to her. Visual hallucinations are very rare. Circle -10 if hallucinations are present.

Items 12-18 (Functional Abilities)

Nursing home respondents are scored on these items solely on physical and mental capabilities, while those not in nursing homes are scored on capability as well as existence of facilities. That is, if the nursing home respondent were living outside a nursing home, and had access to facilities, would these activities be within the person's capabilities? This interpretation is necessary because nursing homes are restrictive environments with policies that often negate functional abilities. As the desire is to be able to compare functional abilities among the sample groups, the restrictive environments must be held as equal as possible - with nursing home residents being considered as dwelling in the immediate surrounding community. The overriding criteria is that the person be capable of carrying out the activity without more than usual assistance needed by an adult.

Item 12 - Reads and Writes Well

Refers to the ability to correspond socially with friends and relatives, and also the ability to communicate with the written word as necessary. Thus, the person must be able to do so in English to receive credit (for this study). There is no difference in scoring for nursing home respondents or those not in nursing homes on this item.

Item 13 - Able to Use Telephone

Respondents not in nursing homes are given credit for this only if they have a telephone available and are physically or mentally capable of initiating phone calls. The rationale is that a telephone is often the only way of getting help in an emergency and is also a means of limited social contact and independence.

Item 14 - Able to Bank and Shop

This question is referring to physical ability to do banking and shopping. If the respondent is unable to do either task without the help of someone else, the respondent will not receive credit for this question.

Item 15 - Able to Prepare Simple Meals and Bake

This question refers to physical and mental factors along with the availability of cooking equipment. The meal must be something more than a T.V. dinner and has to be cooked. Remember that this question and all other questions on this instrument refer to "right now" ability.

Item 17 - Uses Public Transportation

This question refers to actual use of public transportation, not ability to use it.

Items 19-23 (Support from the Community)

Item 19 - Ethnic Compatibility

Respondents receive credit for this if they reside in a neighborhood where they are able to communicate and relate with their neighbors; i.e., there is no language barrier nor gross cultural difference.

Item 20 - Living Alone

If living alone, can get support and help from a relative, friend, neighbor or janitor, when needed.

If the support comes from a friend or relative, that person must be living in the same town. We are interested in availability factor here. If the support is from a janitor, he/she must live on the premises seven days a week. The person(s) should be able to be aware of change in the respondent's condition "daily", if needed. If the respondent fell, and could not reach the phone, would someone check on him/her?

Item 21 - Shopping

Able to shop at reliable grocer (willing to deliver when necessary). Here we are looking for a reliable grocer who is willing to deliver groceries for the client. We are not looking for the ability of the client to get out and shop.

Items 22-23 - Availability of Resources and Facilities

Credit is received for these if such facilities and services are available within the community for use by the respondent - whether the respondent utilizes them or not. Information sources include:

Nursing Home and Boarding Home
Administrators and Nurses

List from Montana Office on Aging.

Item 24 (Living Quarters)

Item 24 - Home Access

Respondents receive credit for this only if they can enter and exit their home without having to use stairs.

Items 25-27 (Relatives and Friends)

Items 25-27

Self explanatory, except that number 26 is also scored if the respondent is living with someone who is not able; i.e., if the person with whom the respondent lives could not render assistance in an emergency.

Items 31-44 (Supplemental Questions to the GFRS)

Item 33 - Residence

1. Coded for a single family dwelling, whether the respondent owns, rents, or shares it.

2. The unit must include cooking facilities, a bathroom and sleeping area. If such a unit is part of a facility which offers congregate meals, a centrally located staff person on duty, and possibly maid service and telephone "check up", it is coded as a Boarding Type Home (see number 3).

3. Some such facilities offer only rooms (with no cooking facilities); others offer full apartments with cooking facilities. Ultimate criteria are that congregate meals be available, and there regularly is a centrally located staff person on duty to render needed assistance. The differentiation between rooms and apartments will be the respondent's scored ability to "prepare simple meals and bake" (Item 15).

4. This is scored for licensed nursing home facilities.

Item 34 - Race

Response based on physical appearance, name, and Medicaid data. Respondent is asked directly if there remains doubt.

Item 35 - Income

This represents household income in instances where husband and wife are residing together. It is noted on the questionnaire that the coded income level is for two people. For statistical analysis, each person is given credit for one half the total scored amount.

Item 38 - Car Ownership/Usage

This item may reflect one reason for a respondent not using public transportation (Item 17) when this latter is available.

Item 40 - Coverage of Assistant/Home Care

This reflects the respondent's answers to the best of their knowledge. It does not necessarily reflect the actual stated coverage of the specific policy.

Item 41 - Placement

This question is concerned not with the current "reason" for nursing home residency, but the perceived reason - by the respondent - at the actual time of placement.

Item 42 - Financial Status (only if independence is indicated)

Financial independence

Means that the person's income is earned income, not money from friends, relatives, pensions or public sources. If the person is supported only by a pension and Social Security, he/she is not independent. If the person receives a pension, but also receives income from land, farming, substantial interest, or part-time employment, etc., and receives less than half support from public monies (including Social Security), etc., he/she is independent, if the public monies are not necessary for basic subsistence.

Stable

Means that the individual has a steady source of earned income (e.g., land, farm, etc.) that is for all practical purposes not likely to fluctuate drastically, nor liable to be used up. Living off savings which are concurrently dwindling does not classify as stable.

Face Sheet

Questionnaire #

__ Region Code 1-5,

__ __, County Code,

__ __ __, Sequence Number

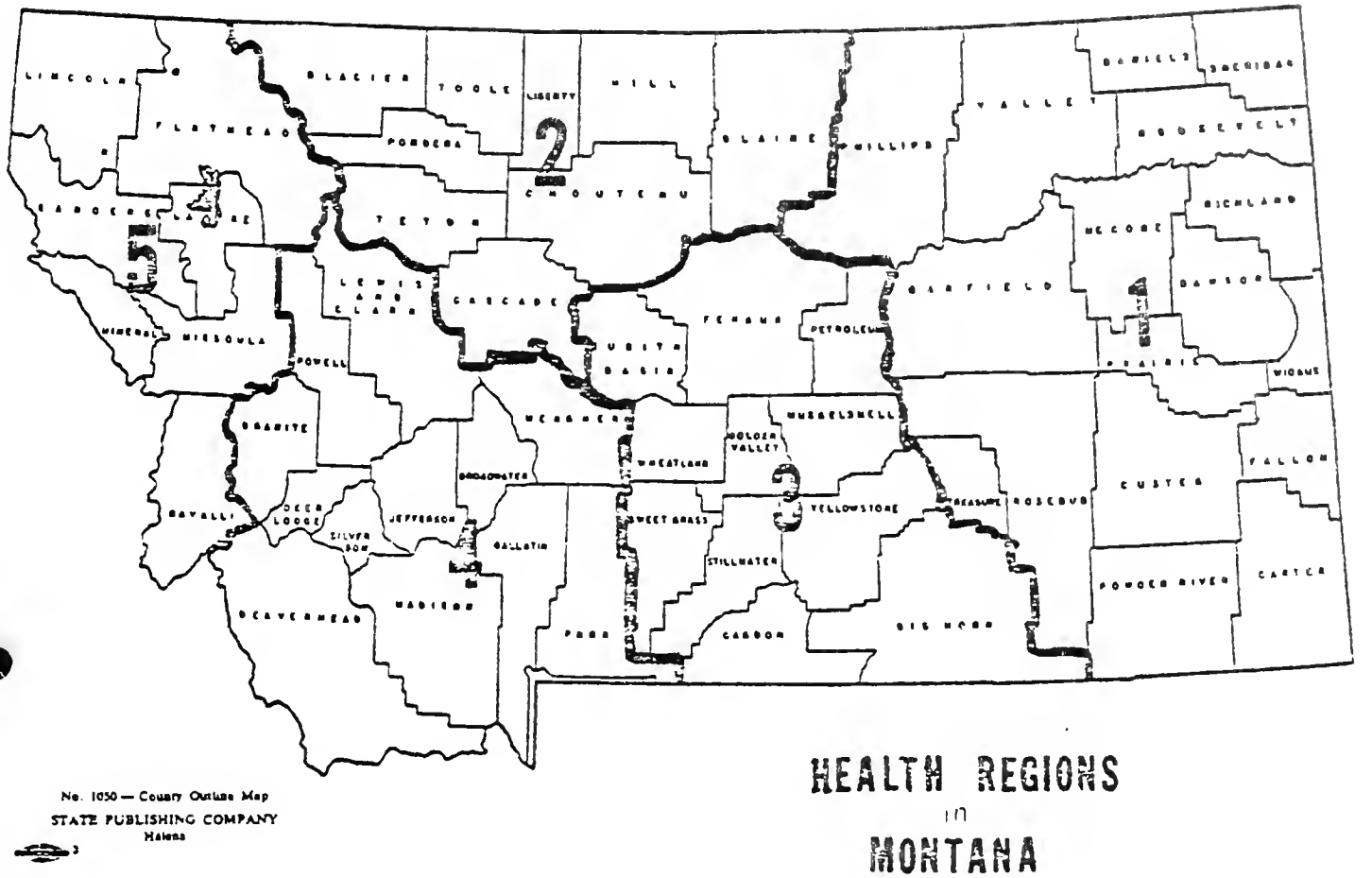
APPENDIX B

MAP AND POPULATION PROJECTIONS BY HEALTH PLANNING DISTRICTS STATE OF MONTANA

MAP AND POPULATION PROJECTIONS

BY HEALTH PLANNING DISTRICTS

STATE OF MONTANA



No. 1050 — County Outline Map

STATE PUBLISHING COMPANY

Helena

HEALTH REGIONS

IN

MONTANA

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
EASTERN MONTANA (Region 1)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Carter	1,956	1,900	1,882	137	142	433	361	1,059	1,120	271	259
Custer	12,174	12,000	14,642	917	1,212	2,992	3,006	6,593	8,625	1,498	1,799
Daniels	3,083	3,100	3,143	214	259	729	600	1,699	1,808	458	476
Dawson	11,269	10,700	13,067	937	1,156	2,822	2,757	5,954	7,868	987	1,286
Fallon	4,050	4,000	4,326	342	390	1,049	915	2,206	2,549	403	472
Garfield	1,796	1,700	1,784	140	139	410	352	982	1,072	168	221
McCone	2,875	2,700	2,613	211	201	710	532	1,488	1,552	291	328
Phillips	5,386	5,400	5,757	435	471	1,417	1,243	2,830	3,302	718	741
Powder River	2,862	2,400	2,285	207	174	666	499	1,331	1,406	196	206
Prairie	1,752	1,900	1,915	123	140	408	352	1,077	1,092	292	331
Richland	9,837	9,900	12,093	797	998	2,596	2,585	5,407	7,094	1,110	1,416
Roosevelt	10,365	10,300	11,272	1,013	1,005	2,883	2,711	5,399	6,412	1,005	1,144
Rosebud	6,032	9,700	11,230	913	931	2,680	2,809	5,168	6,531	909	959
Sheridan	5,779	5,400	5,144	371	382	1,383	1,011	2,931	2,946	715	805
Treasure	1,069	1,200	1,236	94	105	318	272	653	721	135	138
Valley	11,471	13,200	16,325	1,160	1,391	3,700	3,935	7,297	9,858	1,043	1,141
Wibaux	1,465	1,500	1,538	121	135	386	319	806	892	187	192
TOTALS	93,221	97,000	110,252	8,162	9,231	25,582	24,259	52,880	64,848	10,336	11,914

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
NORTH CENTRAL MONTANA (Region II)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Blaine	6,727	6,800	7,191	617	631	1,827	1,639	3,603	4,191	753	730
Cascade	81,804	83,900	88,274	7,668	8,195	21,061	19,503	47,921	52,875	7,250	7,701
Choteau	6,473	6,300	6,491	496	551	1,540	1,114	3,503	3,845	761	781
Glacier	10,783	11,100	11,961	1,188	1,041	3,361	3,142	5,635	6,631	916	1,147
Hill	17,358	17,900	19,641	1,552	1,694	4,392	4,046	10,389	11,960	1,567	1,941
Liberty	2,359	2,500	2,697	190	228	671	562	1,421	1,636	218	271
Pondera	6,611	6,900	7,462	583	647	1,868	1,673	3,718	4,329	731	813
Teton	6,116	6,500	7,875	458	610	1,659	1,710	3,582	4,621	801	934
Toole	5,839	5,400	5,174	398	412	1,416	1,079	2,994	3,048	592	635
TOTALS	144,070	147,300	156,766	13,150	14,009	37,795	34,668	82,766	93,136	13,589	14,953

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
SOUTH CENTRAL MONTANA (Region III)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Big Horn	10,057	10,900	12,161	1,221	1,055	3,138	3,162	5,780	7,053	761	891
Carbon	7,080	7,800	8,889	495	672	1,734	1,796	4,213	5,010	1,358	1,411
Fergus	12,611	13,000	13,617	927	1,040	3,232	2,705	6,892	7,811	1,949	2,061
Golden Valley	911	900	917	59	70	188	160	510	534	143	154
Judith Basin	2,667	2,700	2,745	193	233	646	531	1,445	1,530	416	451
Musselshell	3,734	4,200	4,796	297	371	963	1,008	2,292	2,761	648	654
Petroleum	675	700	678	48	50	178	144	425	435	49	49
Stillwater	4,632	5,200	6,090	351	472	1,231	1,290	2,874	3,533	744	795
Sweet Grass	2,980	3,000	2,897	210	221	630	540	1,628	1,657	532	479
Wheatland	2,579	2,400	1,923	165	126	557	347	1,309	1,096	369	354
Yellowstone	87,367	97,000	126,106	7,936	10,456	24,881	28,134	56,961	76,914	8,020	10,602
TOTALS	135,263	148,100	180,819	11,902	14,768	36,880	39,817	84,329	108,334	14,989	17,900

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
SOUTHWESTERN MONTANA (Region IV)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Beaverhead	8,187	8,300	9,095	699	868	1,849	1,798	4,862	5,485	890	944
Broadwater	2,526	2,800	3,428	206	287	732	771	1,524	2,002	338	368
Deer Lodge	15,652	15,200	15,482	1,144	1,245	3,482	2,991	8,630	9,071	1,944	2,175
Gallatin	32,505	37,300	44,058	2,851	3,527	7,128	7,342	24,304	29,510	3,017	3,679
Granite	2,737	2,700	2,801	206	236	638	564	1,528	1,600	328	401
Jefferson	5,218	6,700	8,169	539	684	1,724	1,869	3,844	4,948	593	668
Lewis & Clark	33,281	36,900	46,931	3,008	3,865	9,247	10,526	21,020	28,090	3,625	4,450
Madison	5,014	5,800	5,556	396	422	1,367	1,072	3,163	3,223	874	839
Meagher	2,122	2,300	2,216	174	173	527	429	1,327	1,326	272	288
Park	11,197	12,100	14,590	839	1,143	2,778	3,088	6,768	8,472	1,715	1,887
Powell	6,660	7,500	9,015	568	729	1,865	1,983	4,373	5,571	694	732
Silver Bow	41,981	43,000	44,457	3,422	3,581	10,618	9,335	23,847	26,555	5,113	4,986
TOTALS	167,100	180,600	205,798	14,052	16,760	41,955	41,768	105,190	125,853	19,403	21,417

SOURCE: Montana Population Projections 1975 - 2000 Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
NORTHWESTERN MONTANA (Region V)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Flathead	39,460	44,600	56,402	3,611	4,679	11,754	12,791	24,640	33,309	4,595	5,623
Lake	11,445	17,100	19,876	1,425	1,603	4,434	4,551	8,906	11,210	2,335	2,512
Lincoln	18,063	16,500	16,589	1,433	1,285	4,587	3,634	9,334	10,108	1,146	1,562
Mineral	2,958	3,500	4,325	295	373	972	1,016	1,967	2,610	266	326
Missoula	58,263	64,600	78,171	5,106	6,240	14,317	14,404	40,199	51,370	4,978	6,157
Ravalli	14,409	18,400	21,142	1,321	1,630	4,532	4,483	9,728	11,886	2,828	3,143
Sanders	7,093	8,100	9,588	615	750	2,061	2,141	4,350	5,539	1,074	1,158
TOTALS	154,691	172,800	206,093	13,806	16,560	42,648	43,040	99,124	126,032	17,222	20,461

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

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